AUG 17 1943
LOS ANGELES PUBLIC LIBRARY

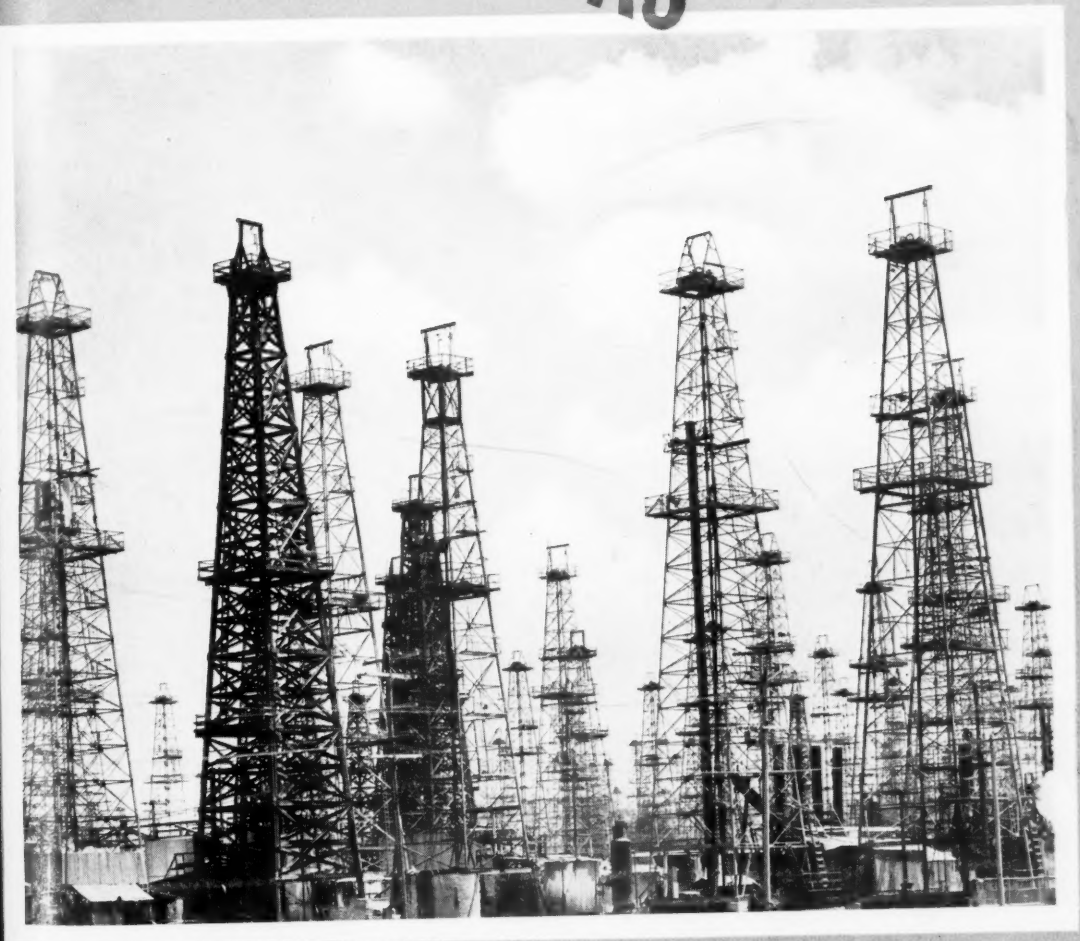
SCIENCE AND INDUSTRY

AUGUST, 1943

fuel oil & oil heat

REFERENCE
DO NOT LOAN

STACKS



...per, 2... Cents a Copy

Table of Contents Page 5

U. S. BULLETIN ★ AUGUST

AVAILABLE HEATING EQUIPMENT

for essential boiler replacements conversion and repair parts

U.S. BOILERS ARE AVAILABLE for essential civilian replacements, and for the military, hospitals and war housing projects.

CONVERSION AND REPAIR PARTS on both steel and cast iron boilers can be supplied at this time. Now is the time to urge owners to purchase such parts and installation of them while we are in a position to supply them promptly.

PACIFIC STEEL BOILERS are obtainable and can be delivered on certain priorities. We suggest you communicate with Pacific Steel Boiler Division of U. S. Radiator in connection with your requirements.

U. S. RADIATOR IN THE WAR

Tank Treads are being machined in United States Radiator Corporation plants. U. S. Radiator is casting magnesium for war production.

Caisson Gates for warship dry docks are being pre-fabricated by Pacific Steel Boiler Division.

In These and other ways United States Radiator Corporation is in the war . . . and learning new and better methods which can be applied to post-war production.

US RADIANT WARMTH

United States Radiator Corporation

AND

PACIFIC STEEL BOILER DIVISION

Detroit, Michigan · Branches and Sales Offices in Principal Cities

Manufacturing Plants At:

Bristol, Pa. · Detroit, Mich. · Dunkirk, N. Y. · Edwardsville, Ill. · Geneva, N. Y. · Waukegan, Ill. · W. Newton, Pa.

Sundstrand

FUEL UNITS

. . . for YOUR future ! !

You, like many other designers and manufacturers we know, are probably dreaming about the "oil burner of 194x" and quite likely have put some of those dreams on paper and into your experimental department. This war has speeded up your thinking . . . and ours. When the time comes to supply the means for better fuel oil combustion, Sundstrand Fuel Units will be ready to pump that fuel the way you want it pumped. Our war work has brought forth some interesting new developments that you can use. Let's get together *now* . . . and talk things over. • Use Sundstrand Fuel Units for current replacement of worn-out Pumps. Write for Bulletins 102, 106, and 107.

ARMY E NAVY

Keep Buying War Bonds

SUNDSTRAND PUMP DIVISION

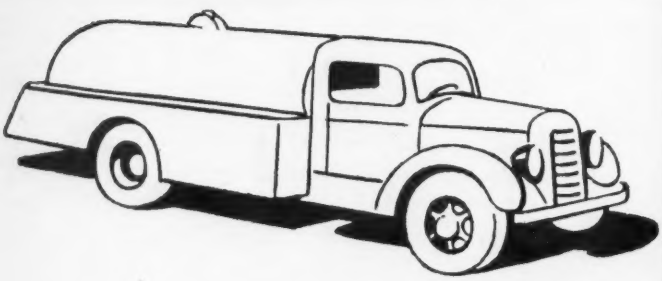
SUNDSTRAND MACHINE TOOL CO. ROCKFORD ILLINOIS U.S.A.

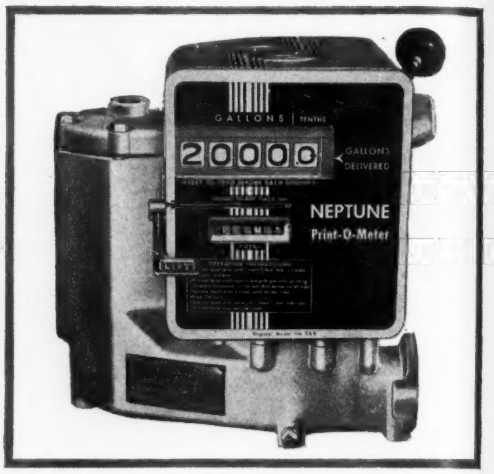
2556 ELEVENTH ST.
ROCKFORD, ILLINOIS

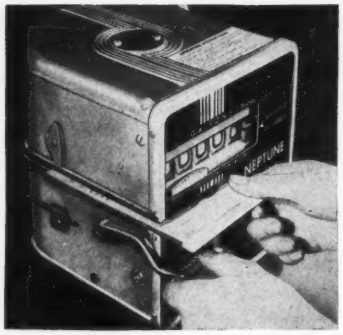
fuel oil & oil heat

It's Good Selling

(as well as profit protection)







ALL IN ONE! Red Seal Compact Type Meter (for tank truck use) combines—in one complete space-saving unit—all equipment necessary for metering. Print-O-Meter Register shown.

BY METERING fuel through the ticket-printing Red Seal meter, distributors and dealers are building up the confidence of their customers. It is complete assurance of full measure delivered. That's good selling.

And it also heads off shortage claims . . . which inevitably cost either your profit or disgruntled customers. Write for data on Red Seal meters for both tank truck and loading rack installations.

A-2090

NEPTUNE RED SEAL METERS

NEPTUNE RED SEAL METER CO.

NEPTUNE METER COMPANY

Main Office: 50 West 50th Street, New York 20. Branch offices at Atlanta, Boston, Chicago, Dallas, Denver, Kansas City (Mo.), Los Angeles, Louisville, Philadelphia, Portland (Ore.), San Francisco and Long Branch, Ont., Canada.

Names in the news

E. A. Mosby, until recently regional fuel oil ration officer of O.P.A., has been appointed sales manager of the Marsh Tritrol Co., Chicago, Ill.

H. E. Chappler, well known in the oil-heating industry, has returned to his old Eastern territory for Minneapolis-Honeywell Regulator Co., with headquarters in New York City.

William L. McGrath, formerly with Minneapolis-Honeywell Regulator Co., in the Philadelphia office, has joined the engineering staff of Carrier Corp., at Syracuse, N. Y., according to an announcement by Herbert L. Laube, vice-president and head of the engineering division.

Elmer G. Lange, manager of fuel oil sales for Commerce Petroleum Co., Chicago, Ill., has been elected to the office of vice-president, according to an announcement by J. Loeffler, president of the organization.

Laurence J. Frohle, for the last seven years manager of the fuel oil department of E. B. Salisbury & Sons, Inc., Schenectady, N. Y., has purchased their fuel oil department, including all equipment, and will operate it along with a heating repair service from Scotia, N. Y., a suburb.

Edwin C. Anderson, Denver, Colo., has been appointed distributor covering Colorado, Wyoming and three western-most tiers of counties in Nebraska, by the Barber-Colman Co., Rockford, Ill.

Ted Smoot, veteran oil burner engineer and well known throughout the industry, has been elected vice-president of the Anchor Post Fence Co., Inc., of Baltimore, Md., manufacturers of the Fluid Heat burners and heating equipment, with which organization he has been associated for many years.

fueloil & oil heat

VOL. 2 NO. 4

AUGUST

1943

C O N T E N T S

SUBJECT	PAGE	AUTHOR
Wildcat Calculations	19	A. E. COBURN
Home Front Service	21	J. W. SCHULZ
Distributors Compare Ration Impact	24	
Eastern Supply Easing	28	
Too Few Servicemen	34	
Check Burner Adjustments	36	
I-B-R Finds Hot Water Economies	40	

NEWS		*DEPARTMENTS*	
Distribution Division Plans Schedule	30		
		5	Names in the News
OHI Directors Vote Changes	32		
		10	Editorial Leaks
N. E. Group Holds Meetings	32		
		16	Oilheating Trends
Oregon Association Expands	33		
		38	New Products
Changes in Government Orders	43		
		45	Readers Forum
Rationing Amendments	40		

COPYRIGHT 1943, HEATING PUBLISHERS, INC. ALL RIGHTS RESERVED. NO PART MAY BE REPRINTED IN ANY FORM WITHOUT WRITTEN PERMISSION.

VOLUME 2, NUMBER 4 OF FUELOIL & OIL HEAT. PUBLISHED MONTHLY BY HEATING PUBLISHERS, INC., 232 MADISON AVE., NEW YORK, (16), N. Y., BY CONTRACT WITH FOWLER-BECKER PUBLISHING COMPANY, OWNER OF FUELOIL JOURNAL (VOL. XXII, NO. 2), AND HEATING JOURNALS, INC., OWNER OF AIRCONDITIONING & OIL HEAT (VOL. XVI, NO. 8), AUG., '43.

HEATING PUBLISHERS, INC., 232 Madison Ave., New York, 16
Lexington 2-4566

A. E. COBURN, *Editor* — ROBERT GRAY, *Business Manager* — A. G. WINKLER, *Advertising Manager*

Pacific Coast Representative: Don Harway & Co., 816 West 5th St., Los Angeles, Cal. Phone: Mutual 8512

SUBSCRIPTIONS

Yearly: $3
Canadian: $4.35
single copy: this issue 25¢

DOWN TO EARTH FACTS ABOUT A MERCOID SENSATHERM

It maintains a home in ideal comfort at any desired temperature.
It is a masterpiece in mechanical precision, design and appearance.
It operates on a variation of ½° above or below the point set.
It is a corrosion-proof mercury switch contact equipped control.
It performs perfectly for years without any servicing attention.

ANYTHING MORE YOU CAN ASK FOR IN A THERMOSTAT?

MADE BY THE MERCOID CORPORATION, 4213 BELMONT AVENUE, CHICAGO 41, ILLINOIS

Berlin-TOKIO BOUND

THE Allied Nations now have on the move the greatest armada of Air . . . Sea and Land Power in the history of the world . . . BERLIN-TOKIO BOUND.

Among this greatest combination of the world's most modern fighting equipment, built in the world's arsenal, AMERICA, are items and parts of which we at Luxaire are specially proud. They were made and fabricated in the large, modern LUXAIRE furnace plant in Elyria, Ohio.

The Foe are on the move, so we at home must set the pace with ever-increasing production to keep them moving, to keep this armada at the gigantic proportions it has reached.

Our large, modern Luxaire furnace plant is contributing more and more to this equipment, which eventually will enable the flags of the Allied Nations to fly over Berlin and Tokio.

BUY MORE WAR BONDS AND STAMPS

Luxaire

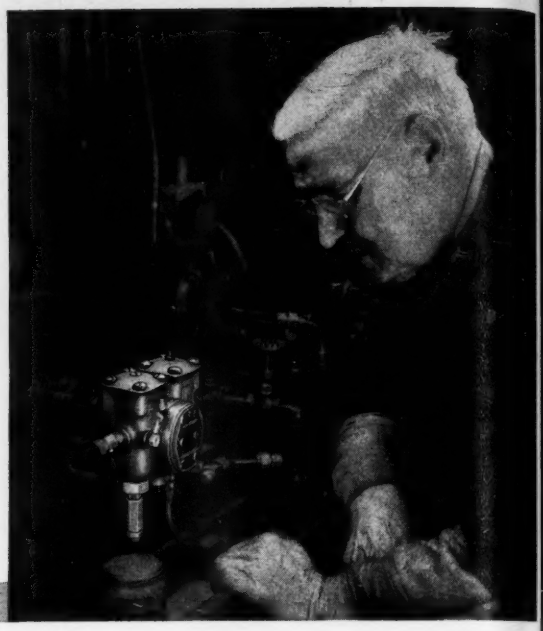
WARM AIR FURNACES AND AIR CONDITIONING UNITS . . . COAL . . . GAS . . . OIL

THE C. A. OLSEN MANUFACTURING COMPANY ELYRIA, OHIO

fueloil & oil heat

46 Service Stars

CAN'T STOP SID HARVEY'S SERVICE!



Despite the 46 stars on their service flag, Sid Harvey, Inc., Webster Electric Service Station at Valley Stream, New York, is carrying on the tradition of service on Webster Electric Fuel Units. With such senior employes as Fred Finkenstadt, shown here inspecting a "Q" Fuel Unit, the Harvey organization is doing a magnificent service job.

By using the facilities of such organizations as Sid Harvey, Inc., and others listed on this page, dealers are enabled to make instant repairs and replacements. These Authorized Service Stations are equipped to make repairs on Webster Fuel Units in accordance with factory specifications. By contacting them you save time and transportation costs . . . avoid possible congestion and delay at our war-busy factory.

Webster Electric's service to the oil burner industry began with the sound engineering principles that produced Fuel Units and Transformers to give year in and year out service with minimum attention.

Today, in the midst of war, much of Webster Electric's service is being carried on by these fine, conveniently located service stations and sales representatives. Once this vital war job is completed, Webster Electric will be ready again to serve the great oil burner industry with new products, ideas for which are now being developed in the crucible of war.

WEBSTER ELECTRIC COMPANY, Racine, Wisconsin, U. S. A., Established 1909. Export Dept.: 13 E. 40th St., New York (16), N. Y. Cable Address: "ARLAB" New York City

WEBSTER ELECTRIC SERVICE STATIONS AND SALES REPRESENTATIVES

Ignition Transformers, Fuel Units, and Parts

California, Los Angeles	Garland-Affolter Engr. Corporation	124 W. 4th Street	Sales Representative
California, San Francisco	Garland-Affolter Engr. Corporation	Rialto Building	Sales Representative
Connecticut, West Hartford	Bell Pump Service Company	100 Park Road	Service Station
Illinois, Chicago	Braun Bros. Heating Supply Company	3146 W. Chicago Avenue	Service Station
Illinois, Winnetka	Braun Bros. Heating Supply Company	812 Oak Street	Service Station
Iowa, Des Moines	Delavan Engineering Company	414—12th Street	Sales Representative
Maryland, Baltimore	R. E. Michel Company	1011 Greenmount Avenue	Service Station
Massachusetts, Cambridge	Cronin Supply Company	60 Broadway	Service Station
Massachusetts, Malden	E. L. Kimball Company	25 Lynde Street	Service Station
Massachusetts, Waltham	Cronin Supply Company	157 High Street	Service Station
Massachusetts, Wollaston	W. S. Plummer	109 Lincoln Avenue	Service Station
Michigan, Detroit	Wm. G. Boales Company	6429 Hamilton Avenue	Service Station
Minnesota, St. Paul	Thermal Company, Inc.	2448 University Avenue	Service Station
Missouri, St. Louis	Brass & Copper Sales Company	2817 Laclede Avenue	Service Station
New Jersey, Elizabeth	Certified Fuel Unit Service Company	600 Spring Street	Service Station
New York, Albany	Certified Fuel Unit Service Company	1018 Central Avenue	Service Station
New York, Brooklyn	Eveready Specialties Company	1724 Flatbush Avenue	Service Station
New York, Brooklyn	The Capson Company	106 Rogers Avenue	Service Station
New York, Jamaica	Sid Harvey, Incorporated	138-76 Queen Boulevard	Service Station
New York, Valley Stream	Sid Harvey, Incorporated	104 E. Mineola Avenue	Service Station
Oregon, Portland	Garland-Affolter Engr. Corporation	1233 N. W. 12th Avenue	Sales Representative
Pennsylvania, Philadelphia	Certified Fuel Unit Service Company	3412-14 W. Allegheny Ave.	Service Station
Rhode Island, Providence	Providence Plumbing Supply Company	47 Pine Street	Service Station
Washington, Seattle	Garland-Affolter Engr. Corporation	532 First Avenue South	Sales Representative

BUY MORE WAR BONDS

Webster Electric "Type T" Fuel Unit used as control for Ray gun Type Oil Burner on U. S. Navy Seaplane Tenders.

WEBSTER ELECTRIC

"Where Quality is a Responsibility and Fair Dealing an Obligation"

Will the storm pass over?

The approaching storm clouds heralding the depletion of our oil reserves is a matter of deep concern these days.

We hear and read a lot of conflicting reports about the future of the industries which rely for their lifeblood on the continuation of the petroleum supply. Predictions are that the demand for high-octane gas and synthetic rubber, together with the country's dwindling oil reserves, will make oil so scarce and valuable that it will no longer be available for the heating of homes.

Forecasting the early extinction of oil reserves has been going on for many years. At least once in every decade the viewers-with-alarm sound the death knell. It was tolled in the days when kerosene lamps were the principal market. It rang out clearly in the early days of the automobile. In 1914 it was predicted that the oil supply would last only a few years, and in 1919 the forecast was that the last drop would be squeezed from the earth in 1937.

Although war has all but stopped the search for new reserves, attention is being given by Government officials to this all-important problem of locating new sources of the vital fluid upon which we depend for Victory and the industrial progress which has made America great.

Opinions vary as to the amount of our proven reserves, but if petroleum from wells were certain to vanish in the next two decades, synthetics, huge shale resources and imports provide good bets that there will be oil. We have faith in the resourcefulness of the oil industry and of the Government officials who are vested with the responsibility of supplying America with this vital necessity.

It is not yet time to lose faith. We believe there will be oil—gasoline for automobiles and airplanes—and oil for synthetic rubber and for the heating of homes. Even if a large percentage of light fuel oils is required for the manufacture of high-octane gas in the future, burners using the heavier and cheaper grades are sure to be developed.

Detroit Lubricator Company is not losing faith in the future of the oil burner. On the contrary, we are betting the considerable expense of amazing new developments in oil burner controls on a great survival of the oil burner industry. These controls will be far ahead of anything now available.

And we believe there will be a market for them.

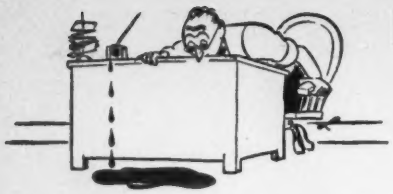
DETROIT LUBRICATOR COMPANY *General Offices:* **DETROIT 8, MICHIGAN**

Division of AMERICAN Radiator and "Standard" Sanitary Corporation

Canadian Representatives—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

"DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators

Fuel oil & oil heat



Editorial leaks

About 60 days from now the heating season will be getting under way in the areas of greatest fueloil demand, and those areas are far from ready. Eastern stocks of distillates are still insufficient to complete summer fill-ups, and a sweating public, on the eve of elections, is clamoring for more gasoline for the family car. This combination of circumstances should give little comfort to the oilheating industry.

Though the new pipeline will be delivering close to its 300,000 barrel a day capacity by the first of October, and there is promise that additional rail hauling of products out of the Middle West will bring total eastern receipts close to 1,600,000 barrels a day by the first of the year, there are refinery problems that have not kept pace with available transportation. Reports from the oil industry indicate we are not getting the planned 15% of distillate from each barrel of crude.

PIWC has guessed that present military demand is taking one-quarter of the current oil production, exclusive of the huge demand for aviation gasoline and lubricants. Many of these products for the armed forces are specially refined, and more are creating tremendous demands on familiar products that otherwise would be available. The result is an unbalance in products for civilian use that demands immediate righting.

One obvious place to save distillates is to salvage those fractions that now are being dumped into residual oils in an attempt to stretch available U. S. supply to cover the demand. Leaving the distillate ends in the residuals also raises the gravity of the entire output and, under present price regulations, raises the price permissible while lowering the heat content. Reductions in distillate yields due to catalytic cracking in the manufacture of aviation gasoline will have to be endured for the present, at least, but there is no reason apparent for dumping available distillates into residual oils.

With the reduction in submarine sinkings and the addition of new tank ships to our fleet, it would seem reasonable that some capacity could be made available to haul residual oils from refineries in the Caribbean area and stretch residual supplies much more than by dumping distillates into them. Military urgency is not a subject than can be judged by civilians, but it may be found possible now to bunker some ships in the Caribbean that formerly pulled oil from East Coast ports.

It is imperative that every effort be made to increase not only the total flow of oil to the East, but to balance that flow so badly needed grades are available when demanded.

◈

Action by officials of the Distribution Division of OHI recommending that petroleum matters be centered in a single, central agency concludes a cycle of thinking that has gone through the field of oil-using industries. A meeting of the American Automobile Association at Cleveland early in July adopted a more pointed attitude in a statement to the press that Secretary Ickes "apparently is more interested in making his predictions of oil shortages come true that in eliminating the shortages," and suggested that the Secretary devote full time to restoring the coal industry to full production.

This attitude may be an injustice to the Secretary, but with sixteen duly accredited titles and jobs ranging from the protection of wild life to the administration of oil supply, it is likely that he has his hands full and should be relieved of some of his many and troublesome duties. Certainly, the administration of petroleum problems is one of the most urgent and important in the country at present, and should receive the full time and attention of a competent man.

Possibly this is a job that Mr. Ickes could and should do. It is hard to guess what his full attention to the job might produce, for he apparently has spent a great deal of his time from the administration of Indian Affairs writing books and speeches extoling the virtues of being a curmudgeon and a bureaucrat. Having no experience in either of these lines we are not competent to judge the Secretary's qualifications, but he makes a strong case for the affirmative side of any debate that might ensue.

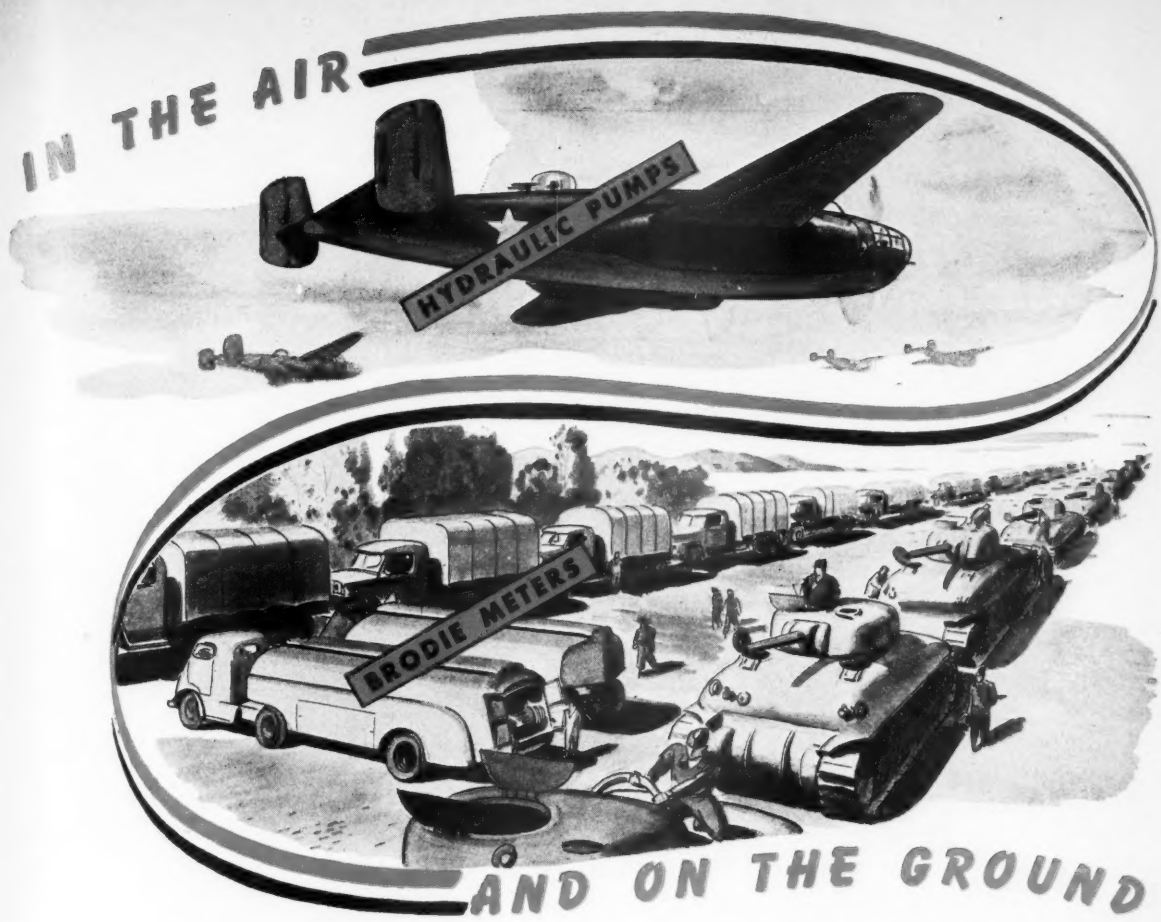
From long experience juggling words and placing punctuation, we know the time consumed and the pangs of composition that must be endured to get the easy-reading, smooth-flowing phrases with which the Secretary lashes himself and his opponents. It is a professional job, admired by the writing trade and accepted as true vitrol by the layman. However, we have not been able to find a single one of the Secretary's sixteen jobs into which this labor fits. Elmer Davis heads the word-slinging agency of the present administration, and Secretary Ickes is charged with various other duties, among which is the supplying of oil. His performance in this department has been brilliant in spots, but erratic, for his time apparently is divided between his many duties, some of which are of the utmost importance to the country. Oil supply, if we may judge from public clamor, is one of the most important of the many the Secretary now rules, and with fifteen other jobs it seems probable that the most attention he can give to petroleum matters is to initial day to day the many important decisions made by underlings.

Petroleum problems deserve, and must have, more expert handling. The rising tide of recognition among oil-consuming agencies only points up the need and confirms the much expressed conclusion. If an end-product such as rubber merits a special administrator, it seems sensible that basic materials like petroleum should have equally competent full-time attention.

◈

More than half the families in the country intend to make purchases of major articles within six months after the end of the war, according to Ernest P. Jones, Jr., assistant commissioner of the Federal Housing Administration, quoting a U. S. Chamber of Commerce survey. Some $860,000,000 would be spent immediately on household appliances, and more than a million families intend to build or buy a new home within the first six postwar months.

It is to this big, and growing market that the industry now is addressing itself. Our share of this waiting business will depend on the preparation we make to get it. No greater incentive should be needed to get seriously at work on postwar planning.



In today's mechanized-motorized warfare, delays or failures caused by mechanical imperfections or trouble, in the air or on the ground, can spell the difference between victory and defeat. Split second timing in the operation of hydraulic equipment aboard light and heavy bombers calls for instantaneous response. Likewise in refueling planes, tanks and trucks, transported fuel supplies must be measured with unfailing accuracy to prevent waste. The building of hydraulic pumps and meters for our fighting forces, therefore, is a job that requires exacting precision and control from original plan right on through to final testing and inspection. That is why the skill, facilities and engineering "Know-how" that for years have given Brodie meters a world-wide reputation for accuracy and dependability have been enlisted in this exacting work.

BRODIE METERS

PETROLEUM METERING EXCLUSIVELY

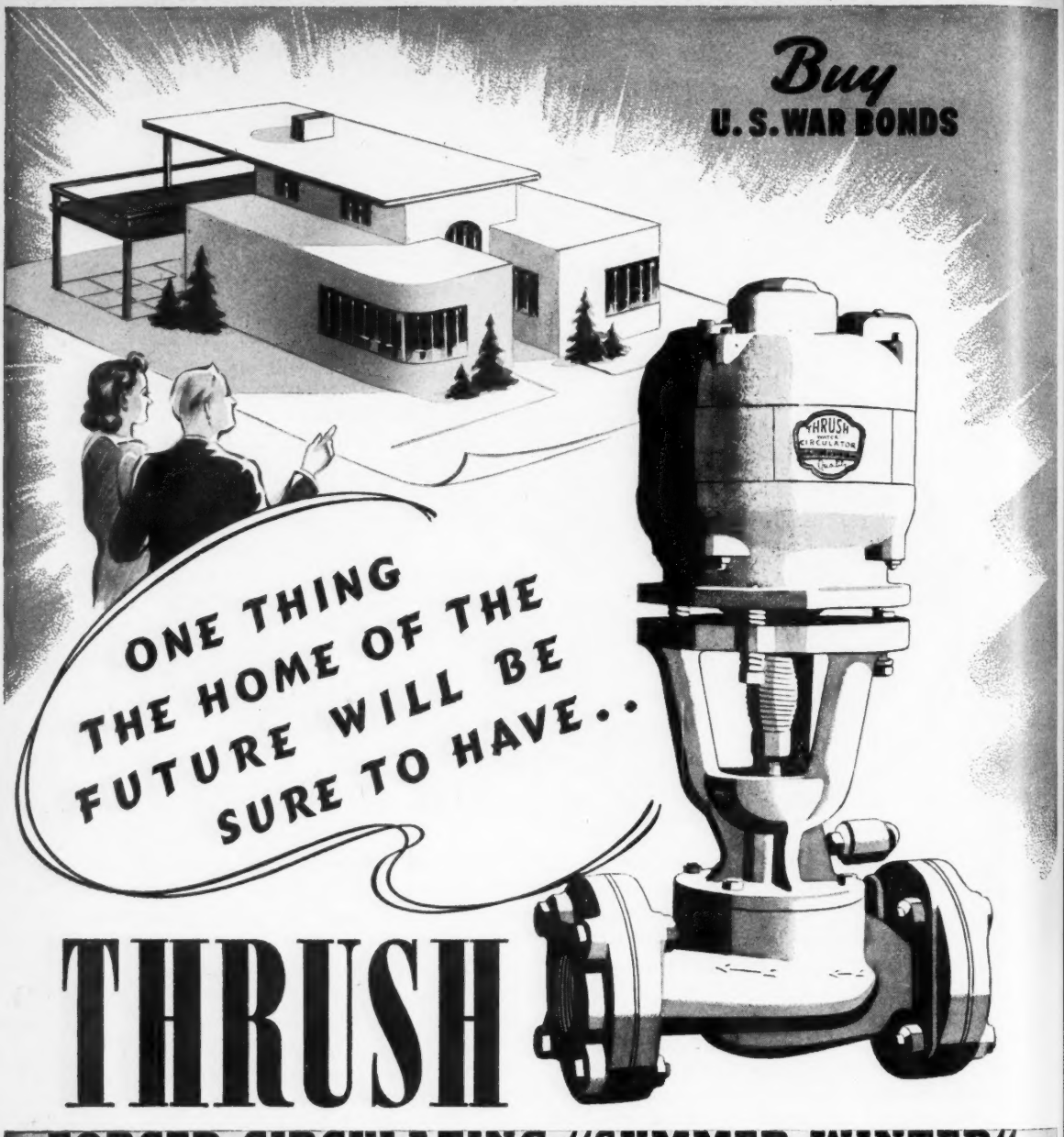
SINCE 1927

RALPH N. BRODIE CO., Inc.
978 61ST ST., OAKLAND 8, CALIF., U.S.A.
CABLE ADDRESS: "BRODICO"

Division Offices: CHRYSLER BLDG., NEW YORK CITY
59 E. VAN BUREN, CHICAGO • 302 SOUTH PEARL STREET, DALLAS, TEXAS

REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES

fuelail & oil heat



THRUSH

FORCED CIRCULATING "SUMMER-WINTER"

System of Hot Water Heat!

IDEAS are on the march! Improvements in products due to the War's demands will mean much to the home of tomorrow. In heating, Hot Water is coming into its own! Already we can predict... most of the better homes of the future will be almost magically heated automatically with Forced Circulating Summer-Winter Hot Water Heat at amazingly low cost. While our facilities today must all be devoted to working for Victory, Thrush Circulators, Valves and Controls are still available under Government priorities. Write Department C-8 for more information now.

H. A. THRUSH & COMPANY · PERU, IND.

What has an Air Battle to do with Automatic Heating?

When a fighter pilot streaks "upstairs" to meet the enemy, there comes one tense instant upon which everything depends—the life of the pilot, the fate of his ship, maybe the success of the whole action...

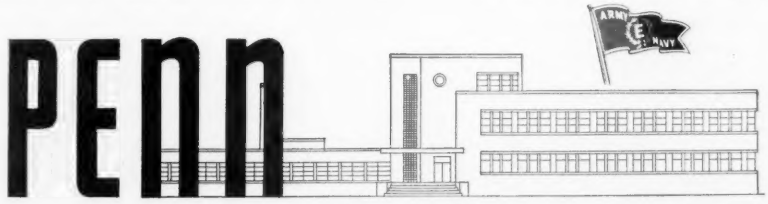
...that is the instant when he presses the electric trigger switch. In a split-second the guns must speak—or he is lost.

As one phase of our direct work for the armed forces, *Penn is producing the solenoids* for these electric "triggers." Naturally we are proud that our skill, experience and precision production facilities *qualify us* to manufacture equipment for our fighters which is governed by extremely high specification standards.

Because men, machines and materials must now *serve our fighters first,* fewer Penn automatic heating controls can be made—only those urgently needed to keep equipment in operation. For that we are truly sorry...we know you understand.

But remember this...out of our experience in meeting the exacting needs of fighting men, will come automatic controls to *establish new standards* of accuracy, convenience and dependability—and which will open new opportunities for profit to you in a tremendous post-war heating market.

That is what an air battle has to do with automatic heating. *Penn Electric Switch Co., Goshen, Indiana.* In Canada: Powerlite Devices, Inc., Toronto, Ont.

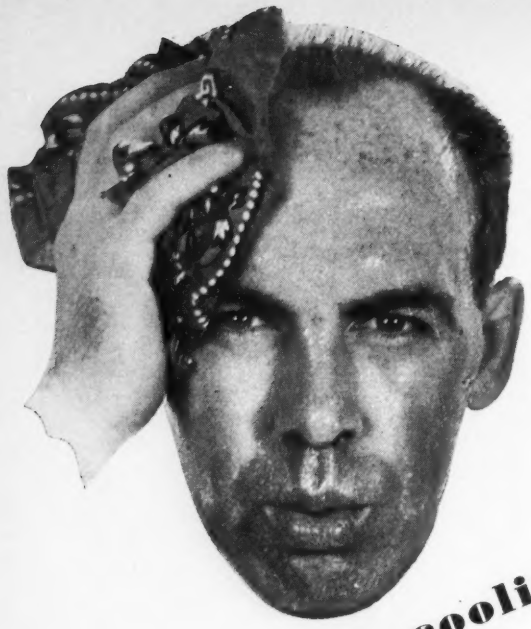


PENN

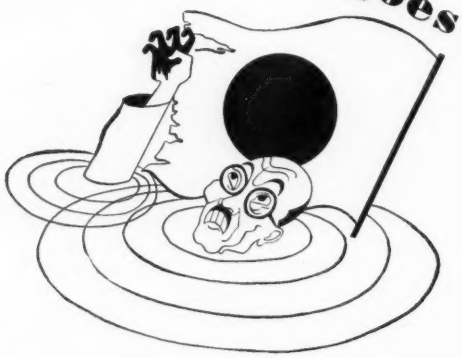
AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

fuel oil & oil heat



No cooling off till the sun goes down



Until the twilight of peace sheds its soft glow upon the earth again we shall devote our energy, our skills and facilities at Shipley, Inc., to the Nation's cause.

Pre-war we made oil-burning units for homes and industry. Post-war we'll be making them again. But, what about today? Our war time products are oil-burning units, too . . . special kinds for service with the armed forces. They're protecting health in portable laundries, shower baths, delousing units . . . providing warm comfort in barracks, mess-rooms and recreation rooms. They are heating bake ovens and preheating airplane engines.

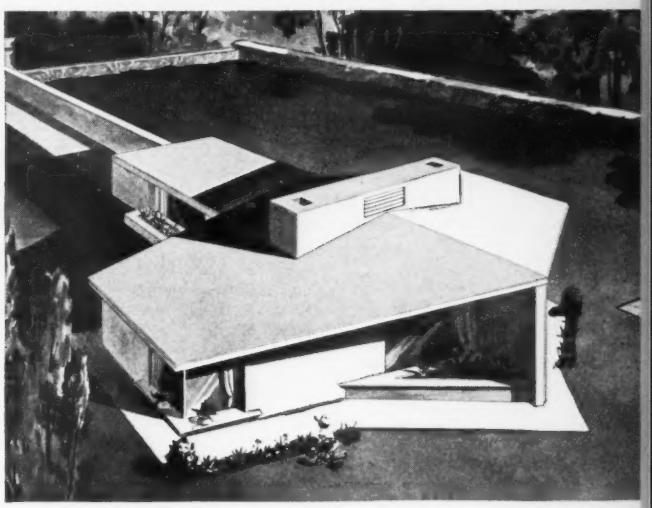
This uninterrupted application of our skills to burner-unit engineering, plus the added experience gained in turning out a variety of other essentials for the war effort will have a vital bearing on the future. It means a head start after Victory on even better York Heat products than you have known before. It is an important fact that is worth while remembering.

YORK HEAT

THOMAS SHIPLEY, INC., and its subsidiary, YORK OIL BURNER CO., YORK, PA.

How Heating Contractors Can Avoid Post-War Heating Headaches

Prospective Home Builder: "We are about to build a new home. It's the type of home we've always wanted. Some dealers have told me I can't get a power burner that will heat it efficiently because it's small and requires a firing rate of less than one gallon of oil per hour. How about it? Here's the home I want—and oil is the fuel I want."



The Home: This "Victory Home," designed by D. Allen Wright, is thoroughly insulated, efficiently arranged, easy to keep up and easy to heat — and the firing rate is less than one gallon of oil per hour. It will never be a headache for heating contractors who sell Timken Silent Automatic Products!

Timken Heating Contractor: "The Timken Wall-Flame Oil Burner is the only type of power burner capable of operating efficiently, dependably and quietly at firing rates as low as 1/3 of a gallon of oil per hour. Timken's long life and economy of operation, so widely known before the war, are *conclusively proved during the war,* make Timken the only buy for post-war builders of small homes."

"Follow the Trend— Turn to Timken"

"Timken not only has the only power burner capable of operating efficiently and dependably at such low firing rates, but Timken's quality products and proved economy give me the edge on *all* types and sizes of homes. And Timken's *other products* for the home round out my business in fine style. I like the way Timken backs up dealers, too, with national magazine and newspaper advertising and effective sales and service helps."

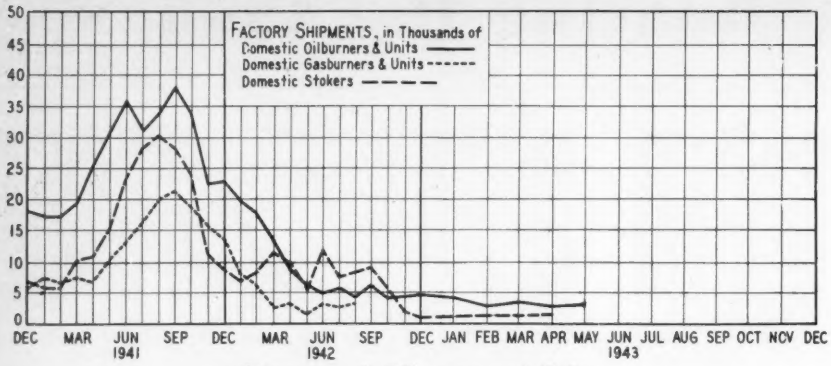
NOTE TO DEALERS: Plan now to profit from selling Timken Products in the post-war building boom. Write us today!

NAVY
For Production "Well Done"

TIMKEN *Silent Automatic*

OIL HEATING PRODUCTS FOR THE HOME

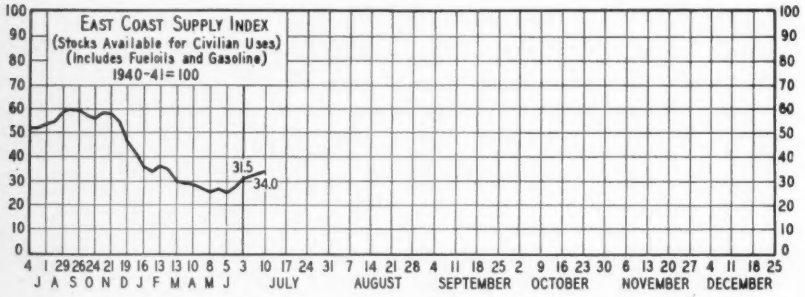
Division of THE TIMKEN-DETROIT AXLE COMPANY, Detroit, Michigan



Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 137 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	MAY			FOUR MONTHS		
	1943	*1942*	*Percent Change*	*1943*	*1942*	*Percent Change*
Conversion	1,366	3,351	— 59.4	8,650	49,549	—82.5
Boiler units	1,193	165	+624.0	4,550	5,587	—18.6
Furnace units	451	1,841	— 75.5	3,372	9,934	—56.1
All domestic	3,010	5,357	— 43.8	16,572	65,070	—74.5
Commercial	3,768	5,845	—35.5	19,781	23,343	—15.3
Total	6,778	11,202	—39 5	36,091	88,413	—59.2



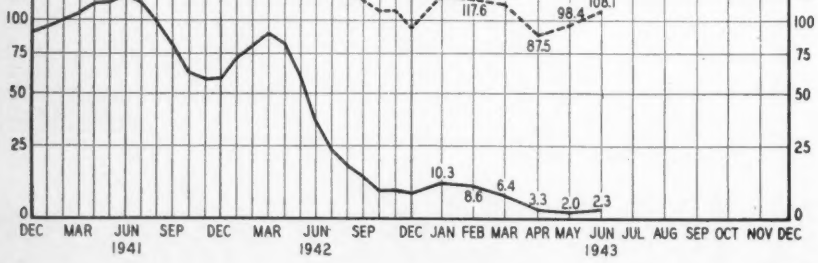
June Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$340	$195	$625	$390	$715	$395
Lowest	200	169	400	299	400	325
June Aver.	258	177	501	352	503	361
May Aver.	256	174	504	350	498	366

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: Jan. 1940 is 100%

WHOLESALE				RETAIL			
June	104.2	Six months ago	105.6	June	110.0	Six months ago	109.1
May	103.7	Year ago	104.0	May	109.6	Year ago	108.6



Oilheating Trends

INSTALLATIONS of domestic oilburn and units during June are estimated 393, down 92% from 4,907 in the sa month a year ago. Reporting key deale showed a drop of 94.5% while perm records from 40 cities show an 88.8 decline. Installations in May were 4 in April 268.

PRICES: Both wholesale and retail i dexes registered a small rise over M for conversion burners. The tables al show furnace-burner units up a bit, wi boiler-burner units averaging lower.

STOCKS: This month dealers were n asked for stock figures, since there h been little movement. However, in a other month or two it will be importa to again measure dealer holdings to s what has been the effect of WPB's L revision. Factory stocks during the mon of May fell off about another thousan At the start of the month they were 3 115 domestic burners and units; t month ended with 35,112. Shipmen during May were 3,010, so indicated ne production was 2,007.

SERVICE INCOME: June income fro service departments of reporting deale averaged $1,532, up 28% from $1,1 average for the same dealers a year ag

RATIONING OBSERVATIONS: By July next year's ration coupons were flowin out to customers in 65% of the citi heard from; in the other 35%, customer had received none by that date. In citi where coupon flow had started, 29% the customers of reporting dealers ha gotten them. Including the cities whe none had yet gone out, it appears th about one-fifth of all domestic heatin users had their coupons by the tenth.

Seventy-six percent of the reportin fueloil distributors have asked their cu tomers to deposit coupons with them the other 26% don't want them. Last se son, opinions on this were about 50-5

Those placing orders by July 10 fr Summer fill-up amounted to 23% of a customers of all reporting distributor This is a little higher than the percen age that had received coupons.

COAL SUPPLY: Reports from principa oilheating cities show that in 52% o them the supply of domestic size coal i "Fair"; the other 48% report "Tight with none "Easy." One city reports "A none "Easy." One reports "All gone

AUTOMATIC DELIVERIES: From a study made at mid-winter it was disclosed that about half of those distributors using automatic delivery methods before rationing believed it necessary to drop them under the new conditions. However, the group reporting this month (smaller in number, but larger average firms) shows a considerably different figure, while revealing a strong trend back to automatic methods. Of all those now reporting, 71% used automatic deliveries pre-rationing; 47% continued them during the past season; 70% will definitely use them next season, with an additional 1% undecided. This is illuminating, in that distributors apparently believe that improvements in ration technique point to much easier going ahead.

RATIONING ENFORCEMENT: Hottest topic of the month is whether or not to prosecute flagrant violators of rationing regulations during the season past. OPA has started some prosecutions, more are on the agenda. As a guess, the total will run upward of fifty. Recognizing that probably every distributor violated some of the regulations in the confusion of the early months, there is apparently no intention of indictments in wholesale numbers; rather the cases tried thus far seem to indicate that OPA is shooting at larger firms who persistently transferred important quantities of fueloil without getting coupons.

Much pressure is being exerted on OPA by industry elements to drop all prosecution, because of the general confusion in getting the program under way. Of all distributors expressing an opinion on the topic this month, 54% feel that prosecution of flagrant cases should go on; 46% think that everything should be dropped. Several of those favoring prosecutions think that cash fines would be better than suspension orders. Typical comments on the subject from fueloil distributors are:

"None should be prosecuted" . . . "There is a wide difference between wilful violation and that forced on the industry by expediency. I think flagrant violations should be punished by suspension orders, others not at all" . . . "Rulings should be flexible enough that violation is unnecessary. When exceptions are required, action should be immediate, then when violations occur they should be prosecuted" . . . "Considering all circumstances under which dealers were forced to operate during the first year of rationing, no penalties should be imposed. Strict penalties should be prescribed for violations after July 1, 1943" . . . "Petty violations should be overlooked, but the more flagrant cases prosecuted. Suspension of business does not seem fair to fueloil customers, since most of them were not party to the violation" . . .

"The flagrant violators should be prosecuted, as they took some business from honest, conscientious distributors" . . . "Over 90% of dealers honestly tried to comply. Lateness of regulations, dearth of manpower and low efficiency of that obtainable made compliance impossible.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
1943	1942	1943	1942		1943	1942	1943	1942
June		6 MONTHS			June		6 MONTHS	
..	..	..	..	Albany, New York	..	..	..	..
0	143	6	1225	Baltimore, Maryland	87	113	414	953
..	..	..	..	Binghamton, New York	0	1	0	14
..	..	..	..	Bloomfield, N. J.	0	25	0	86
51	85	113	451	Boston, Massachusetts	10	1	21	84
0	9	3	166	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	209	10	..	69
..	..	..	..	Des Moines, Iowa	1	89	3	465
0	110	0	493	Detroit, Michigan	511	589	2526	4681
0	3	2	48	Elizabeth, N. J.	7	0	47	5
1	4	2	52	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	1	1	3	21
..	..	..	..	Hackensack, N. J.	0	2	0	40
1	5	14	268	Hartford, Conn.	..	..	..	..
0	3	25	371	Hudson County, N. J.	..	..	..	..
0	1	1	48	Irvington, N. J.	2	7	2	38
..	..	..	..	Lynn, Massachusetts	2	0	2	25
..	..	..	..	Meriden, Conn.	..	..	..	..
0	38	4	171	Milwaukee, Wisc.	11	72	158	355
5	46	29	279	Minneapolis, Minn.	0	28	2	309
..	..	..	..	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	0	0	6
3	3	10	73	Mt. Vernon, New York	..	..	..	..
4	6	6	156	Newark, New Jersey	..	..	..	..
0	9	14	109	New Bedford, Mass.	..	..	..	..
0	1	1	55	New Haven, Conn.	..	..	..	..
..	..	..	..	New Orleans, La.	..	..	..	..
0	3	0	36	New Rochelle, N. Y.	0	0	0	19
..	..	..	..	New York City (total)	..	..	..	..
..	..	..	..	Brooklyn-Queens	..	..	..	..
3	27	31	667	Manhattan, Bronx, Rchd.	..	..	..	..
0	29	149	574	Norfolk, Virginia	3	47	170	791
0	3	2	12	Oakland, Calif.	..	..	..	..
1	40	14	255	Omaha, Nebraska	1	11	3	269
0	0	1	20	Orange, New Jersey	0	0	0	3
0	2	0	32	Passaic, New Jersey	..	..	..	..
0	0	0	42	Paterson, N. J.	8	8	26	22
..	..	..	..	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	0	12	6	37
0	4	2	62	Portland, Maine	0	2	11	20
8	10	15	913	Portland, Oregon	45	64	1233	647
..	..	..	..	Poughkeepsie, N. Y.	..	..	..	..
0	3	0	180	Providence, R. I.	0	0	0	39
..	..	..	..	Reading, Penna.	0	0	0	8
0	5	1	64	Richmond, Virginia	0	10	33	202
1	0	1	166	Rochester, N. Y.	..	..	..	..
0	0	3	58	Rockville Center, N. Y.	0	0	0	14
0	0	0	15	Salem, Massachusetts	0	0	0	6
1	47	28	272	St. Louis, Missouri	0	50	2	290
0	28	6	357	St. Paul, Minnesota	0	8	1	167
5	42	15	183	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	138	453	613	1374
..	..	..	..	Springfield, Mass.	130	4	194	247
0	3	0	46	Stamford, Conn.	..	..	..	..
0	0	1	19	Syracuse, New York	2	7	26	67
..	..	..	..	Trenton, New Jersey	0	0	56	1
..	..	..	..	Utica, New York	0	0	0	57
5	47	18	720	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	0	0	0	17
0	2	9	42	White Plains, N. Y.	..	0	..	3
0	3	3	94	Wilmington, Delaware	8	0	408	13
0	21	9	180	Worcester, Mass.	..	..	..	..
..	..	..	..	Yonkers, New York	..	..	..	..
89	785	538	8974	*Totals*	1176	1614	5960	11,464
—88.8	..	—93.9	..	*Percent Change*	—27.2	..	—47.9	..

***Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.**

ARE YOU READY
for your greatest test?

THIS is not an advertisement for McDonnell products. The advertisement that was to have appeared in this space was withdrawn just before the publication went to press. It was withdrawn because we feel there is a subject of far more importance to all of us at this time. We ask you to pause with us for a moment to consider the greatest responsibility — the greatest opportunity — that has ever come before the heating industry.

You have a job to do—a job that must be done and done now! When we say "you", we mean every contractor, fitter, plumber, helper, wholesaler and manufacturer in the heating industry.

You know what that job is. It's the job that has been steadily stressed from every side—the job of conserving fuel. It is now being given official urge by the Emergency Fuel Conservation Program of the WPB . . . *but*—

—Despite the emphasis that has been placed upon it from all sides, we find ourselves wondering whether you have brought yourself to full consciousness of the responsibility and opportunity it commands.

You have been authoritatively told that in the heating field alone a paltry 1% saving of fuel would amount to 1,720,000 barrels of oil and 1,800,000 tons of coal—would release to the car-hungry railroads 7,224 tank cars and 36,000 coal cars.

Moreover, every heating man knows that it would be practically impossible to find a single heating plant where even simple changes would fail to produce savings fifteen to thirty times greater than that. As Mr. Howard Coonley, Director of Conservation Division of WPB, expressed it to the industry in an address before A.S.H.V.E.:

"One half or even one third of the theoretical saving is a goal which should inspire the cooperation of even the most thoughtless individual if the opportunity were properly presented."

Yes, Mr. Coonley has well stated it there, and it seems to us that the big word in his statement is "if". The "if" is the stumbling block. *IF* the case is not presented properly it will be your fault; our fault. It is your job, our job, to present this message to the heating plant owner.

If we say the owner doesn't give a hang whether he saves fuel, we are rating our own ability to present facts low indeed. The national need to conserve fuel should be enough for any real American. But forget that for the sake of argument if you choose, and you can still point out dollar savings to more than repay the plant-owner's outlay for fuel-saving measures.

If we say it is difficult to obtain equipment and materials, we are simply expressing an assumption based on conditions that were never as bad as pictured, and are becoming better every day. On the subject of allocating materials for heating equipment, Mr. Coonley has this to say:

"The most expert advice is needed to determine whether we can trade the critical materials and labor involved for the 15 to 20% reduction in fuel consumption that such installations usually return."

You are in a position to give that expert advice. In fact, *you* are being asked to give it.

Think it over: It hasn't been very long since the heating industry was in a state of confusion. Now the air is clear. Now you are the man of the hour. How can you measure up to your new opportunity? As always, the answer is *plan the job.* No one can plan it for you, but we felt we might relieve you of some of the details. A list of some of the things that should be checked is given here, and no doubt it will suggest many points to you that we have overlooked.

If you would like to have mailing pieces to sell the conservation idea to your customers write us. They are yours for the asking!

Let's tell the owners what we can do for them. There is no freeze on essential material, and certainly there is no freeze on individual initiative!

E. J. McDonnell

These points should be checked in every heating plant

1. Is boiler free of grease, oil, and foreign matter?
2. Are boiler surfaces clean?
3. Are radiator air valves and main vents clean and free?
4. Are there leaking radiator traps?
5. Leaking supply valves?
6. Has oil burner, stoker or gas burner been cleaned, inspected, adjusted?
7. Are chimneys clean? Do they leak — need tuck pointing?
8. Does plant need damper regulator? If it has one, does it work properly?
9. Are pop safety valves leaky or frozen?
10. Is compression tank water-logged?
11. Are grates in good condition?
12. Are convector fins clean? Are radiator surfaces clean?
13. Does boiler or hot water tank need insulation?
14. Are controls needed? Inside thermostat? Indoor-outdoor control? Pressure control, Aquastat?
15. Are controls properly adjusted?
16. Are there sagging pipes?
17. Are hot water radiators air bound?
18. Is circulator working properly?
19. Is boiler protected from low water damage?
20. Are relief valves needed? Are those in service adequate?
21. Are vacuum and condensation pumps in good condition?
22. Are return traps, drip traps and steam traps in good condition?

The above are just a few things that can be looked into to help your customers save fuel. Where cleaning and adjustment is not sufficient, repair or replacement should be made.

McDONNELL & MILLER, 1306 WRIGLEY BUILDING, CHICAGO 11, ILLINOIS

Doing One SAFETY CONTROLS *Thing Well*

McDONNELL

BOILER WATER LEVEL CONTROLS—SAFETY RELIEF VALVES

©M&M

Wildcat Calculations

By
A. E. Coburn

Future petroleum supply, statistically at least, is closely tied at present to a political battle between Government agencies over the matter of crude oil price. One side, seeking a higher price, points to the need for additional discoveries that the higher price would bring. The other side, contends that the present price schedule is adequate, and any increase would be inflationary. While the verbal battle rages, the oilheating industry and its customers are being showered with shrapnel from the barrage. Facts on probable future oil supply, lifted from the cloud of price consideration, are not too alarming.

TO DRILL OR NOT TO DRILL seems to be the question, though there are conflicting stories about how much drilling now is going on, and what it means in terms of immediate and future oil supply. The Petroleum Administrator for War, supported by the petroleum industry, wants a higher price for crude oil, and they contend that present price levels are too low to encourage wildcat drilling and the discovery of new oil fields. The Office of Price Administration says present oil prices are high enough, and any increase would not only be inflationary, but would add little to the amount of wildcat drilling.

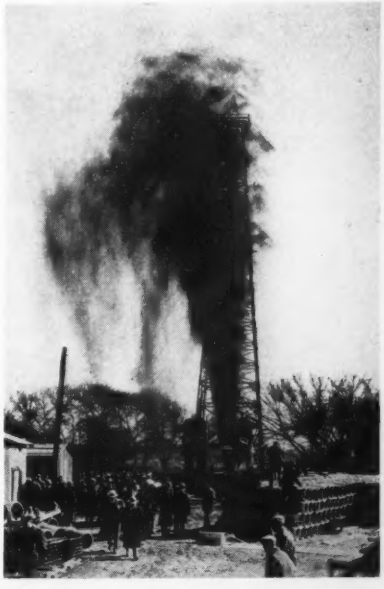
Around this big crap game are the usual number of hangers-on who are placing side-bets and giving advice that appears in black headlines in the newspapers. Though there is little action in the game, it is getting noisy and the shouting is frightening the neighbors.

There is no way for the casual observer to know the merits of the demand for higher oil price, since the experts are not in agreement on the subject. It is probable, however, that a higher price for crude oil would stimulate efforts to discover new oil. Price, in the past at least, usually has determined the amount of effort made to get new supply, and it is reasonable to believe that higher crude prices now would stimulate wildcatting. If, as OPA contends, a crude price increase would serve chiefly to increase the price of crude already being produced, it is probable that many of the oil producing companies would be anxious to find some permissible way to spend the additional income to avoid higher tax brackets, and greater exploration effort would be a logical activity in which to invest the additional income. Aside from this consideration, there is evidence that small independent producers are in tight financial straits, since they are not equipped to refine and sell finished products that the war effort is demanding. The financial statements of the integrated, major oil companies are not typical of all segments of the industry.

There may be many other valid reasons for an increase in the price of crude oil that are not apparent to all members of the oilheating industry, and if so, few oilheating men would oppose the increase strictly on the merits of the case. The industry generally is opposed to increases in the price of oil for its possible effect on the market, but no thinking man would encourage the continuance of an economic unbalance that would threaten the petroleum industry or the future supply of oil. Sentiment in the oilheating business favors a price increase if the need is real.

These same oilheating men are thoroughly resentful of the plea that the country is fast running out of oil, and of the obvious attempt to stampede the public into demanding a crude price increase to save the country from disaster. There has been no convincing proof yet presented to show that a price rise will have any appreciable effect on impending disaster; and what is more important, there is little indication that a disastrous oil shortage is threatened. Figures that have been advanced to prove imminent petroleum exhaustion have a dull and hollow ring.

Typical of recent statements on the subject of threatened oil exhaustion (unless crude prices are raised 35 cents a barrel) is one by John M. Lovejoy, president of the Seaboard Oil Company, which has been released with others by Chairman J. D. Gill of the PIWC committee on cost and price adjustment. The statement is in rebuttal to OPA's refusal of the price increase.



Discovery—*Gushing wildcats are spectacular but of little commercial value until they are brought under control, and the field they tap is defined and developed.*

"Price Administrator Brown's statement," says Mr. Lovejoy, "carries the implication that the number of exploratory wells drilled in 1942 was sufficient. The facts seem to prove conclusively that exploration in 1942 was entirely inadequate and that the rate of drilling exploratory wells must be greatly increased if military and essential civilian demands are to be met.

"It is true," Mr. Lovejoy explains, "that the number of exploratory wells drilled is not necessarily an exact measure of the number of fields that may be discovered, or of the amount of reserves thus made available, but it is the best yardstick we have. We are dealing here with the laws of chance, the first rule of which is that the greater the number of chances, the greater the number of hits.

"The following table (Table 1), compiled by E. L. DeGolyer, assistant deputy petroleum administrator, in April, 1943, summarizes results of wildcat drilling from 1937 through 1942 and is highly significant.

"Although this table shows that the number of new fields discovered has increased with a high record in 1942," Mr. Lovejoy continues, "the new fields of that year are small, and account for a total of only 317 million barrels of new reserves, which is a new low record for many years. The trend of exploration is definitely established over a seven or eight year period to be less new reserves per field discovered and per exploratory wells drilled.

TABLE I WILDCAT DRILLING AND DISCOVERIES
(Compiled by E. L. DeGolyer, PAW)

	Total Wildcats	*Successful Wildcats*	*New Fields Discovered*	*New Reserves* Discovered (Million Bbls.)*	*Discovered Per Field (Million Bbls.)*
1937	2,224	222	148	2,119	14.3
1938	2,638	294	166	1,894	11.4
1939	2,589	224	170	943	5.6
1940	3,038	302	217	945	4.3
1941	3,264	503	209	361	1.7
1942	3,045	493	261	317	1.2

*Revisions, extensions and new horizons are credited back to year of field discovery

"The greater number of fields discovered is much more than offset by the decline in average size per field from 14.3 million barrels in 1937 to 1.2 million barrels in 1942," Mr. Lovejoy points out. "During this same period the amount of oil discovered per wildcat well declined from 950,000 barrels to 130,000 barrels, or less than one-seventh as much.

"The industry's ability to produce is directly proportional to its proven and developed reserves, which can be maintained only by constant additions through discovery. Over a period of years extensions and additions to previously discovered fields have held our total estimated reserves at a figure commensurate with withdrawals, but a large part of these additions merely represent new estimates of old fields.

"The vital need is for new sources of supply," Mr. Lovejoy concludes. "DeGolyer's table shows new discoveries by years with revisions, extensions and new horizons credited back to the year of field discovery. Although information obtainable through more complete development may result in upward revisions of the figures given for 1941 and 1942 field discoveries, the downward trend is so clearly established it cannot be questioned. New discoveries far greater than in previous years are essential to the welfare of the nation."

That is not the complete text of Mr. Lovejoy's statement, but it should be sufficient to show the lengths to which one side is willing to go to frighten the public into accepting a crude price increase. He asks us to become alarmed because 2,224 wildcat wells drilled in 1937, plus five years of development and extension work on those fields, has brought to light seven times as much oil per original well as the undeveloped fields discovered last year. He admits that future development of 1941 and 1942 field discoveries "may result in upward revisions of the figures," and the whole history of the petroleum industry will support him in his conservative prediction. Estimates of newly discovered fields, based on the first, exploratory drillings usually are a small fraction of the ultimate yield from the field. It will be seen from the last column of figures in the table, "Millions of Barrels Discovered per Field," that the size of the figures is in direct relation to the age of the field. This has been true since the pres-

Production—*An old and over-developed field such as this is not possible today with regulations controlling well spacing. Reasonable development is essential before the field can make an appreciable contribution to production or reserve figures.*

(Continued on page 46)

Home Front Service

By
J. W. Schulz

"TALK, TALK, TALK! Everybody talking about the importance of keeping oil burners operating at peak efficiencies!", an oil burner dealer exclaimed recently, "when, actually, we find it next to impossible now-a-days to keep our customers' burners running at all. A breakdown calls for fixing. Only after that can you worry about high efficiency. With good customers sometimes waiting twelve hours for a service man, you don't tell your man to test Mrs. Murphy's burner for CO_2 before he moves along to the next six jobs he's got on his list."

Realism stacks up high against idealism in a hard-pressed service organization. Fixing plugged nozzles, air-bound oil pumps, defective controls, and short-circuited wiring is the realistic side of keeping the home fires burning. Oil-fired heating plants must be kept running. A defect that stops the oilburner can close down a war plant, a food preparation factory, a hospital, or a hotel or apartment house full of war workers. Where Johnnie War Worker lives in a house heated by oil, there is an oilburner that must be kept running to keep Johnnie on his job.

Jacking up the efficiency of oilburners to save oil is of undeniable importance. Before he can get around to the highly specialized steps that save oil, however, a dealer must have a service organization which can keep the customers warm.

Standards for servicing oilburners are on the slump in many cities. This holds true for war effort centers where tending to oilburners is necessary for uninterrupted production, and for oil shortage areas where poor condition of burners means wasted oil, and wasted oil means still greater oil shortage. The service standards are slumping because service organizations are in poor condition, not able to cope with their responsibilities. Some burner dealers are in financial trouble because "profits" from the sale of new equipment are not now available to support service departments that used to

do splendid work—but always at a loss. But the big trouble for most dealers lies in shortage of skilled manpower.

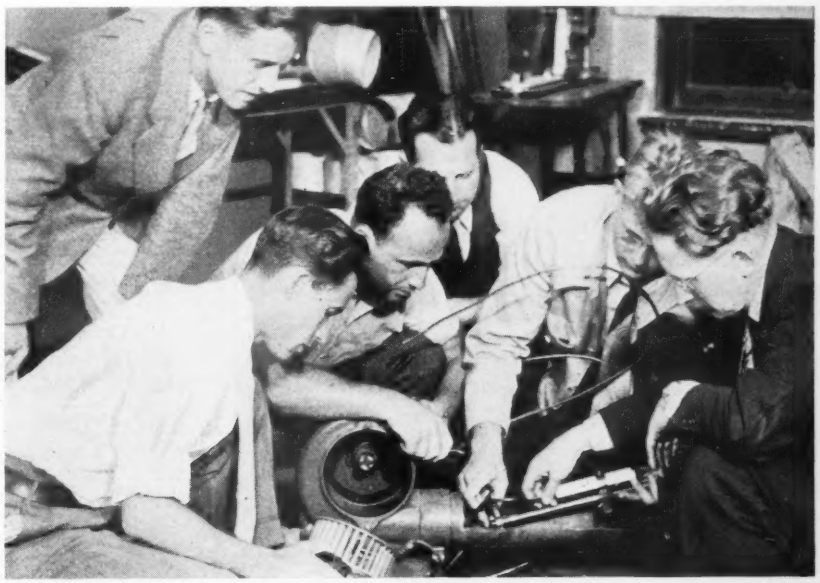
The strength has been drained from many an oilburner service organization. At the same time, the work has increased in amount and in importance. Equipment is older and more neglected; it needs more attention. Thousands of pieces of run-down, wornout equipment, which normally would have been replaced during the past year, have not been replaced. Needed parts for defective equipment are hard to get; hours are spent finding them or making up for the lack of them, or on obtaining and installing the next best thing. On top of all this comes the need to exercise increased effort to save oil. Extra work must be performed so that buildings are kept reasonably warm on oil rations meager compared to past consumption.

"What can I do about this manpower shortage?", a certain dealer asked last December.

For months the manpower shortage had been slowly liquidating him. His customers were getting the kind of burner service he used to snort was rendered by his competitor, "Joe Botch-It." Binks, we'll call him here, could not charge his customers for the hours his men wasted tinkering with a sick burner, and he could not for long carry the service department losses out of his own pocket.

The forms which accompany this article constitute one part of a plan used to inject new life and enthusiasm into this Binks service organization that in the middle of last winter came close to being a war casualty.

Up to last December, boss Binks had been a mere observer of the things happening to his service organization. He had been too busy with oil ration problems of his small oil company, or had become too dispirited to spend many hours working on the service problems that seemed so gloomy. He worked a bit at the service department complications. He had managed to hire a total of six new men, se-



Information swapping *and work on actual burners speeds the training of green men.*

lected as potential service experts, each with a smattering of experience to begin with. Evenings, at their homes, he managed to impress each of these men with the advantages of doing oilburner service work. The enthusiasm that had caused them to take the jobs wore off. The one on Binks' payroll the longest worked six weeks.

Analysis of the problem in December showed that Binks could instill interest and enthusiasm into the men he wanted to train as service men. Always a good salesman, he could be one now and get the services of promising men at a fair rate of pay. What he had not done was to try to keep the men after he had them.

The old foreman of the service department had not been replaced, and therefore Binks' service men now simply were given service calls by the girl in the office and told to do the best they could with them. No one in the company checked up on what they did. When they finished one call, they went on another. If it appeared that one of the men could not fix a broken-down burner, the office girl tried sending another man, generally one of the old timers in the company. New men found the work doubly hard because they did not know the characteristics of the installations the company had been servicing for years, and they were resented no little by older employees.

The renaissance of Binks' service efforts was headed up by a series of evening conferences attended by three men of the service crew; two of them were old employees, one was a newcomer.

The first thought Binks brought up at these sessions was, "Should we continue to operate our service department?" It developed that the community certainly needed a strong, competent burner service organization. The men, themselves, cited instances of the tremendous oil savings that had been produced by exercising knowledge of oilburners, combustion, and heating, and by demonstrating persistence. The men were doing nothing less than war work when they tended to the burners that provided heat to homes and process steam in the war plants.

"Perhaps, even though you men are doing war work when you service burners," Binks confided at a later meeting, "you would be better off working in a war plant."

This brought a discussion of the pro's and con's, again from the men, themselves. Service work, it was reflected, was not monotonous. Every day brought new problems and new angles on old problems. The service man is his own boss in this respect.

An interesting development came out of the boss's confession that there was a problem of cutting the losses of the service department, so that owning it would be a less expensive luxury. One of the men revealed he had the idea that t difference between what he was paid p hour and what the service customer pa for his time was money in the boss's sa ings account. A ten minute outline of th problems of service department los cleared this man's mind and showed a the men why efforts to operate more ef ciently were being planned.

The real business to be taken up at the service sessions had to do with the bas methods used to handle service problem on the job. Binks had obtained some ou side help on this matter, and several mee ings boiled down to service instruction fo the men. By this time several newly hire men were attending what amounted to "Service School."

Service efficiency could be improved, appeared, by more exact methods. Th big thing is to find out what is the troubl with a defective burner. That often take all the knowledge and skill a man ca muster. Next, repairing the trouble come as a relatively simple matter on most ser vice calls. Examples of blunders wer cited. A motor had been taken from burner when the real trouble, diagnose properly after three months' of breal downs, had been poor contacts in th stack control panel. The original moto had been put back on the burner, and th bill for it had been cancelled. The com

(Continued on page 48)

SERVICE-REPOR

1 Call Received - Date 3/4/43 Time 8:10 A
2 Owner's Name C. W. Regis ☒ Acct
Address 428 Maple Ave
3 Complaint No heat since last night
4 Assigned to J. Harris Time 8:15 A
5 Cause of Trouble Lost prime - air off on safety
6 Remedy Applied Located and sealed air leak in suction line
7 Time - On Job 8.35 AM Off 9:40 AM
8 Material Used None
9 Condition of Equipment Fair
I reported to Mrs R. boiler needs cleaning
10 Owner's Signature Mrs. C. W. Regis

Individual reports *of this type furni data for discussion at service meeti*

Service Summary

Date	Owner	Service	Complaint	Cause of Trouble	Remedy Applied
3/25/43	P W Gould	J. Harris	Oil Odor Upstairs	Oil was spilled on last oil delivery	Cleaned up the oil - tightened 2" plug on 275 tank
3/25/43	Children's Hospital	H. E. Gates	Hot Water Getting Cold	Nozzle of direct fired water heater plugged	Cleaned nozzle and oil strainers - Oil man to daily
3/26/43	Dean & Co. E. Factory	J. Harris	Needs service for #3 Boiler	Heavy oil pump set blows fuses	Eared up on shaft gland & told fonks not to touch it
3/26/43	M. Kalter	L. O'Malley	Funny Noise	Draft regulator rattles	Cleaned burner & noz, turned burner for quieter flame
3/26/43	Lakeview Apt House	H. E. Gates & J. Harris	Puff	Burner adjust. poorly by man from — Oil Company	Adjusted draft, oil & air for 12% CO_2 - Checked ignition & all safety controls
3/26/43	East. Food Company	H E. Gates	Not enough high pres. steam	Boiler water gets low	[illegible]

Posted summary *of recent service rendered keeps suggestions and a record of work before new men.*

I want to change over my heating plant
I'm on the swing shift. Who offers Sunday service?
I wonder who's an authorized dealer
"WHERE TO BUY IT"
Oils-Fuel-(Cont'd)
GULF
FOX
FUEL OIL

Because of the war the Classified is now more useful

The war has changed the living habits of the public in many ways. Where they are unable to replace worn heating equipment with new installations for the duration, home owners and others will be needing their present heating plants serviced and reconditioned.

Many people in your town, perhaps finding their regular service dealers out of business, are now looking for new ones.

If there are war industries nearby, your trading area probably has a goodly number of newcomers, who don't know "Where to buy it" or where to get service for their heating systems. Many of them will turn to the Classified.

Much profitable business will result from such new developments. Why not discuss the possibilities of the Classified as an effective advertising medium with the Directory Advertising Representative? Just call the telephone company's business office.

fuel oil & oil heat

Mid-West Fueloil Distributor Compares Rationing Impact

FUELOIL RATIONING HURT most dealers last winter, not only from the point of view of reducing gallonage, but also by increasing their operating costs. The exact extent of this derangement is not possible to estimate, but last April in these pages it was possible to present a table showing in detail the effect of rationing on the operation of Sherwood Brothers, large Baltimore distributor.

Though he prefers to remain anonymous, a large distributor in the Chicago area has disclosed comparable figures on his operation last winter. Fortunately, these two companies, in different sections of the country, had almost identical gallonage, fleets and mileage, and the differences in their figures are largely attributable to differences in the territories, average size of tanks and drops, and other variations in general operating practices. The accompanying tables show a detailed comparison of the operations of these two companies for the month of February this year against February, 1942.

The Chicago distributor used one more truck in February this year to deliver nearly a third less oil than in the same period of 1942. In Baltimore the drop in gallonage was 32% with the same number of trucks. Miles traveled dropped 32.2% in Chicago, against only 9.4% in Baltimore, though the hours worked in Chicago were 9.9% greater for the month.

Some of this difference may be accounted for in the method of delivery used by the two companies. Sherwood at Baltimore made a determined effort to continue automatic deliveries, and actually increased the percentage of its deliveries this year to 96.9% automatic from 94.4% in 1942. In Chicago automatic deliveries dropped to about 60% of the total this year, against 65% in 1942. Special deliveries, though a small part of the total, decreased in both operations, indicating a strong effort to educate customers and abide by ODT's request for less mileage.

Differences in average deliveries between the territories is revealed in the tables, but apparently the larger average drops in the Chicago area were of no advantage under rationing, though the average drop there was only 17.8% less this year, compared with a 20.8% loss per delivery in Baltimore. In more normal times the Chicago company drops 72% more oil per delivery while consuming only 25% more time than in Baltimore. Under rationing they delivered 80% more oil per drop, but the average time per drop increased to 60% more than in Baltimore. This difference may reflect the considerably lower percentage of customers who filed their coupons with the Chicago distributor, necessitating driver-tailoring of coupon sheets at the door.

Labor cost per thousand gallons of oil handled in Chicago normally is slightly less than 3% more than in Baltimore. Under rationing, however, this direct labor cost increased to nearly 13% more, again possibly due to the difference in handling the coupons in the field.

Though total miles traveled by the Chicago company's 26 operating truck dropped 32.2% in February, the gallo delivered per truck mile was almost u affected, whereas Baltimore deliver 22.4% less oil per mile under rationin Normally, in spite of larger averag drops, the Chicago company delivers le than 4% more oil per mile than in th more compact Baltimore area. Under ra tioning this spread has widened to 33 more oil per mile in Chicago.

There is an obvious danger in stressin too heavily these comparable figures fo a single calendar month on two individua companies. There are to many variation possible in any single operation for a limited a time that might affect the figure This is particularly true of gallons of d delivered per degree-day. Though the de gree-day figures are accurate, the gallon delivered in a single month by a singl company may not reflect the deman accurately unless it is known that tank were equally full at the beginning an end of the month. Different oils and use would also affect these figures.

FUELOIL DELIVERIES, FEBRUARY, 1942 and 1943

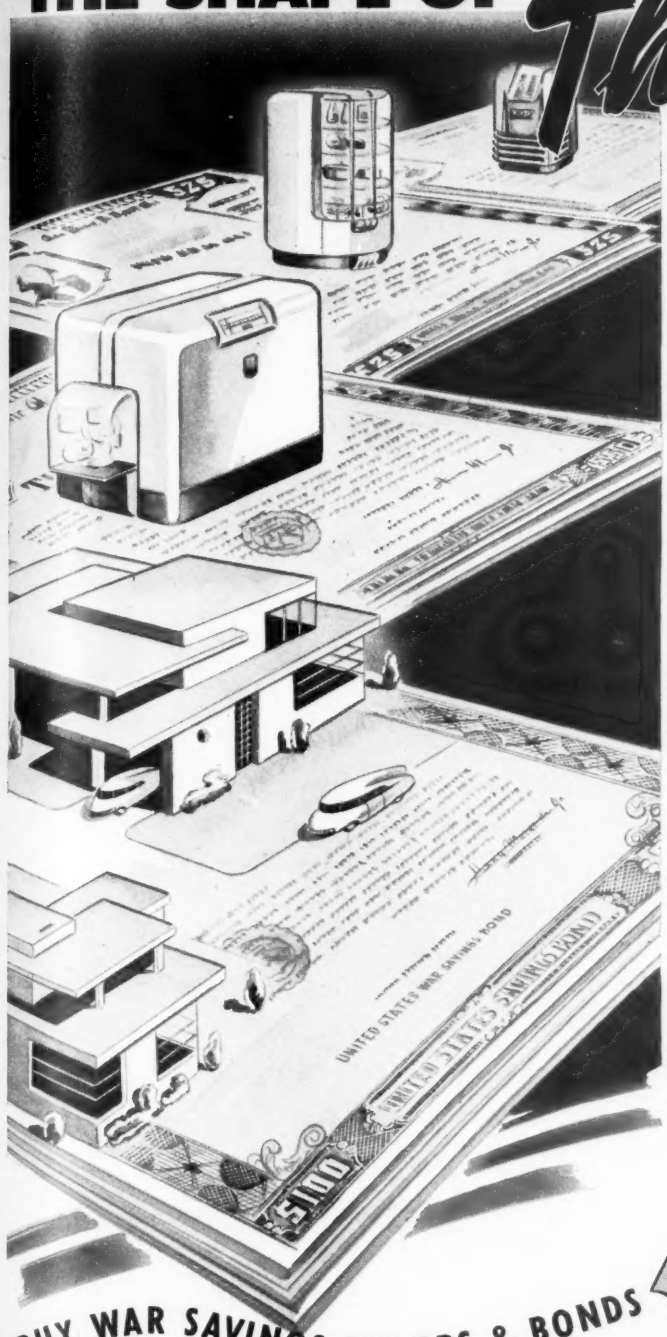
Chicago Area

	February 1942	*February 1943*	*Change*	*Percent Change*
Gallons Delivered	2,691,578	1,804,091	—887,487	— 32.
Number of Trucks	25	26	+ 1	+ 4.
Total Miles Traveled	24,122	16,349	— 7,773	— 32.
Hours Worked	4,331	4,758	+ 427	+ 9.
Number of Deliveries	7,554	6,142	— 1,312	— 18.
Number of Automatic Deliveries	4,910	3,684	— 1,226	— 24.
Number of Call-in Deliveries	2,595	2,440	— 155	— 6.
Non-Deliveries	...	...	...	...
Special Deliveries	49	18	— 31	— 63.
Degree-Days (Chicago)	1,076	1,042	— 34	— 3.
Minutes per Stop, Inc. Running Time	34.4	46.5	+ 12.1	+ 35.
Miles per Stop	3.2	2.7	— .5	— 15.
Labor Cost per Thousand Gallons	1.94	3.02	+ 1.08	+ 55.
Gallons per Delivery	356	294	— 62	— 17.
Lost Truck Hours	...	...	...	...
Percent Automatic Deliveries	65.0	59.9	...	...
Percent Call-in Deliveries	34.3	39.7	...	...
Gallons per Degree-Day	2,501	1,731	— 770	— 30.
Gallons per Truck Mile	111	110	— 1	— .

Baltimore Area

	February 1942	*February 1943*	*Change*	*Percent Change*
Gallons Delivered	2,738,515	1,911,443	—827,072	— 32.
Number of Trucks	25	25	...	...
Total Miles Traveled	25,555	23,152	— 2,403	— 9.
Hours Worked	6,089	5,585	— 504	— 8.
Number of Deliveries	13,290	11,661	— 1,629	— 12.
Number of Automatic Deliveries	12,548	11,301	— 1,247	— 9.
Number of Call-in Deliveries	598	334	— 264	— 44.
Non-Deliveries	142	286	+ 144	+101.
Special Deliveries	144	26	— 118	— 81.
Degree Days	855	709	— 146	— 17.
Minutes per Stop, Inc. Running Time	27.5	29.0	+ 1.5	+ 5.
Miles per Stop	1.92	1.98	+ .06	+ 3.
Labor Cost per Thousand Gallons	1.89	2.68	+ .79	+ 47.
Gallons per Delivery	206	163	— 43	— 20.
Lost Truck Hours	136	64	— 72	— 53.
Percent Automatic Deliveries	94.4	96.9	...	...
Percent Call-in Deliveries	4.5	3.1	...	...
Gallons per Degree Day	3,185	2,695	— 490	— 15.
Gallons per Truck Mile	107	83	— 24	— 22.

"THE SHAPE OF *Things to Come*"



BEYOND those War Bonds an aroused public is so faithfully buying, postwar America is already beginning to take shape. We have a good start toward better living in a better America. But only a start! Because Victory must come first!

VICTORY must come first on every fighting front! Victory must have first call on the skills of our engineers and technicians! Victory must come first in our factories and on our farms! Victory must come first in the minds and hearts of all Americans! Because the definite "shape of things to come" depends entirely on the successful conclusion of our global war. Then — and only then, will Oil-O-Matic skill, facilities and productive capacity again be devoted to building the products of better living.

WAR BONDS are the *only* key to the *two* victories that mean better living in a better America. As War Bonds, America's dollars help build and buy the weapons of Victory for our fighting men. As War Bonds, these dollars mean Victory over inflation with its runaway prices and economic destruction. As War Bonds, today's billions of dollars will actually increase in numbers to become tomorrow's *buying power* for better living.

BUY WAR SAVINGS STAMPS & BONDS

THE BONDS YOU BUY TODAY ARE YOUR GUARANTEE OF A *Better Tomorrow!*

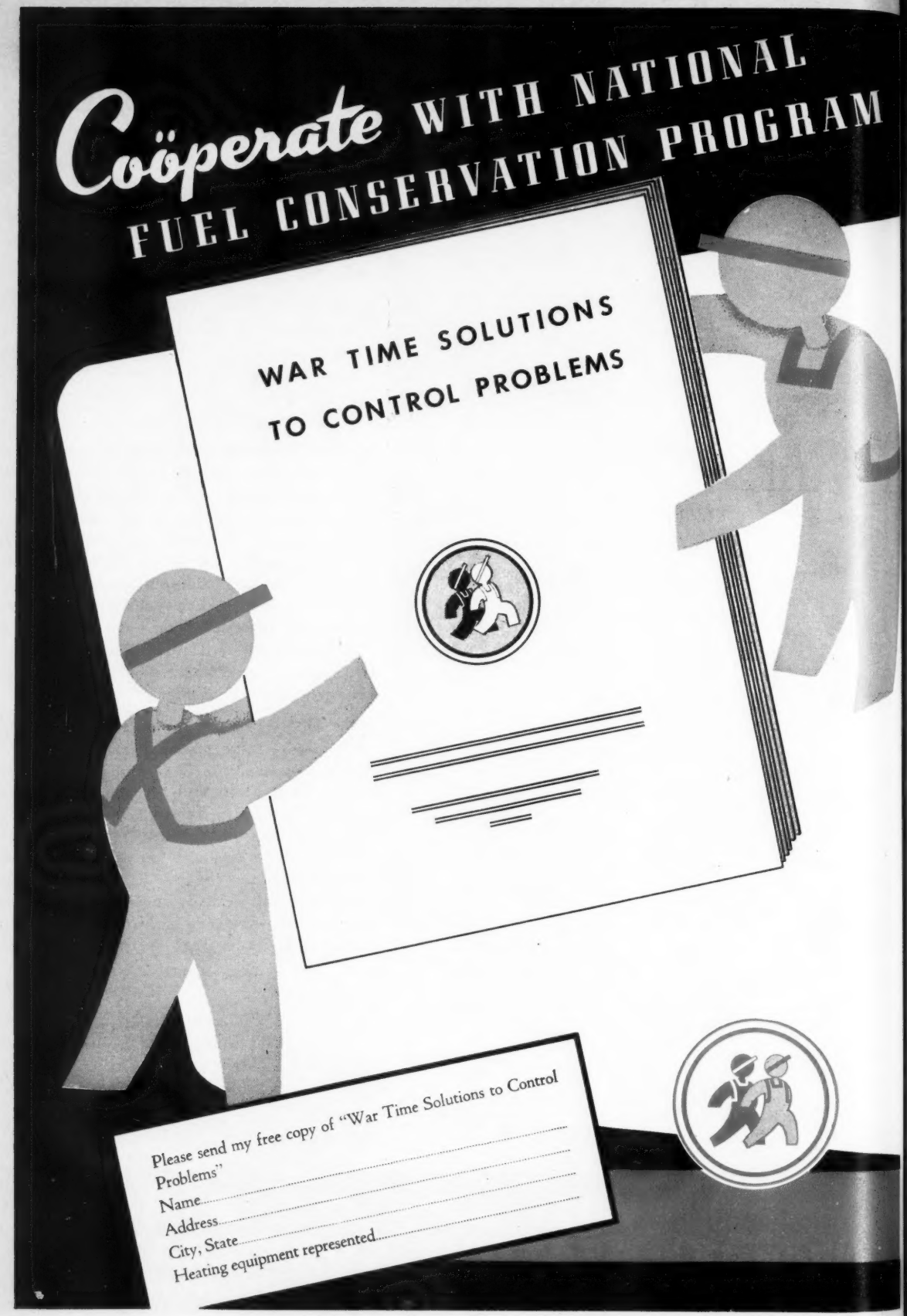
ARMY E NAVY

WILLIAMS OIL-O-MATIC HEATING

WILLIAMS OIL-O-MATIC HEATING CORPORATION

BLOOMINGTON, ILLINOIS

fuel oil & oil heat


Coöperate WITH NATIONAL
FUEL CONSERVATION PROGRAM
WAR TIME SOLUTIONS
TO CONTROL PROBLEMS
Please send my free copy of "War Time Solutions to Control Problems"
Name
Address
City, State
Heating equipment represented

GET THIS VALUABLE HELP ON YOUR CONTROL SERVICE PROBLEMS

The Perfex Twins have some good news for heating equipment dealers who are plagued by labor and material scarcities. Here at Perfex, we have worked out a way to make servicing and replacement of controls easier for you. Our two-part plan concerns itself first with adding to your supply of

TECHNICAL HELP

We will send to any dealer requesting it a copy of a brand new booklet entitled, "War-Time Solutions to Control Problems." This book is chock-full of information and suggestions on how to make available controls do the work of unserviceable units which no longer can be duplicated. It contains many extremely helpful wiring diagrams as well as complete descriptions of Perfex-built controls which you can obtain now for repair and replacement jobs. Experienced as well as inexperienced service men will find real help in this book.

The second part of our plan has to do with helping you get necessary controls.

Priority regulations and manpower shortages have made it difficult for many heating equipment manufacturers to keep dealers supplied with sorely-needed controls for repair and replacement. These difficulties are being overcome, and most manufacturers will therefore be in a position to supply controls as needed.

Should you be unable to secure what you require through your regular channels, we invite you to get in touch with us at Milwaukee.

JUST DO THIS

So if you want some really valuable help on that tough job of yours, including some basic instruction material for inexperienced service men, send the coupon for your copy of "War Time Solutions to Control Problems." It will be supplied promptly and without cost to you. Clip that coupon — now.

PERFEX CORPORATION

500 West Oklahoma Avenue *Milwaukee 7, Wisconsin*

Eastern Supply Easing as Big Inch Nears Completion

CEREMONIES at Phoenixville, Pa., on July 19, marked the sealing of the last pipe joint on the 1362-mile 24-inch pipeline from Texas to the East Coast, and the promise of an easier, if not ample, supply of oil to the Atlantic Seaboard. Line-filling operations had started five days earlier when the first batch of crude started east from Norris City. It was expected to take about three weeks to fill the line with 4,000,000 barrels of oil, after which deliveries were expected to start at about 100,000 barrels a day at Philadelphia and New York refineries.

By August 15, it is predicted that nine of the fifteen pump stations on the eastern leg will be completed and deliveries then may reach 200,000 bbls. a day. The other stations will be completed to bring deliveries up to more than 300,000 bbls. a day as fast as pumps and equipment can be delivered.

Meanwhile, tank car loadings have reached an average of more than 1,000,000 bbls. a day during the week ended July 10, and 300 more tank cars have been released for East Coast service. Present plans anticipate a continued short haul for rail movement of petroleum products when the pipeline takes over the bulk of the crude movement. Products will be taken from Mid-West refineries and hauled east, rather than return to the Texas-East Coast run. Though this is expected to increase eastern stocks and ease the critical situation caused by the greater-then-expected offshore demand, it will reduce Mid-Western stocks and make for a tighter supply situation in that area.

Tanker Use Possible

Easing of the submarine menace has speeded the possible movement of petroleum products to offshore points, and it is believed possible that this speed-up, coupled with fewer losses, may make some tanker capacity available for coastal hauling and a better supply situation. Such changes if made, probably will not be made public.

With greater rail movement of petroleum into District 1, the stock position is improving. Daily average tank car shipments to the East, and the index of stocks for recent weeks were:

	Bbls/Day	*Index*
June 12	968,535	26.8
June 19	962,056	27.6
June 26	999,684	29.5
July 3	960,362	31.5
July 10	1,017,029	34.0
July 17	994,236	35.0

(Index is percentage of 1940-41 normal)

Small Conversions Out

Policy on forced conversion to coal has been changed to remove all installations of less than 10,000 gals. from the necessity to convert, regardless of territory. Consumption is based on the 1942-43 season, not on prewar use. Since early May this policy has been confined to New England, North and South Dakota, Nebraska, Kansas and Missouri.

In the meantime, fueloil ration coupons have been rushed to consumers, and the first period coupons have been made valid as of July 1, to allow the filling of all customers' tanks before the heating season starts. Deputy Administrator Ralph Davies has endorsed the idea of customers ordering their fueloil as soon as possible, but hastens to explain that the tanks probably cannot be filled "for several weeks" due, he says, both "to the necessity of utilizing fueloil trucks in the most efficient wartime manner possible and to the lack of adequate manpower in the distributing branch of the petroleum industry." Oil men, conscious of the dribble of distillate that has been moving east, can think of other possible reasons for their inability to fill tanks.

The poor stock position need not cause too much worry in the trade, as the Economics Committee of PIWC has pointed out that the greatly increased oil transport facilities will make possible movement of sufficient distillate next winter to supply the demand even though stocks may be unseasonally low. With public pressure for more gasoline increasing along the Atlantic Coast, the chances for building distillate stocks are not too bright. In the meantime, the campaign to "order next winter's fuel today" may break in full force any day.

While the industry is struggling with immediate problems, the long term oil shortage is being kept alive by a barrage of publicity. Secretary of the Navy Knox bowed out of the ill-fated Elk Hills deal with Standard of California with a scare public statement on the complete U. S. oil exhaustion within 20 years, and Dr. Benjamin T. Brooks of the last winter's headlines has crashed into print again (this time as a petroleum technologist) viewing with alarm the possibility that the United States may become an oil importing, instead of an oil exporting, nation. Industry men have not become much excited, but the public has few facts on which to judge the importance of these statements.

PIWC Endorses Oil Sharing; Midwest Conversion Drive Starts

BARRING FUTURE unforeseen military demands that may again throw an excessive burden on the eastern states, the Petroleum Industry War Council believes that the country east of the Rocky Mountains will be bearing the burden of rationing equally. Completion of the Big Inch line, and the ability of other means of transportation to further increase the oil flow to the Seaboard, will make possible equalizing supply, according to William R. Boyd, Jr., chairman of PIWC.

Reasons for the critical oil situation, according to Mr. Boyd, are:

1. Failure of the government to meet the continuing unanimous requests of the oil industry and the Petroleum Administrator for an increase in the price of crude oil;

2. Material and manpower difficulties

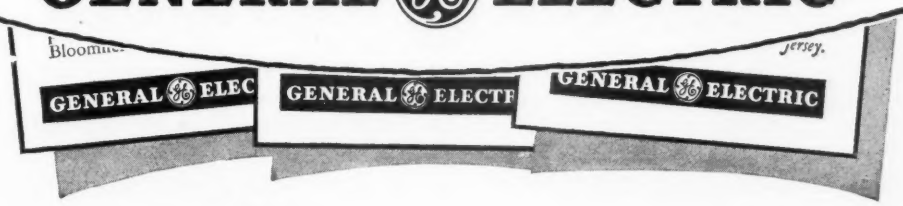
Getting YOUR Share of Summer Service Business?

To help G-E Dealers even out their service business—getting *more* this summer, cutting down on the Fall rush—is the purpose of these three national ads, appearing in *American Home* and *Better Homes & Gardens*. For your local use—to tie-in with this campaign—General Electric has prepared special newspaper advertising mats and post card mailers which are available through your G-E Heating Distributor.

If you are not now using these promotional tools to help stimulate summer service agreements, plan to do so—today! There's plenty of service work to be done—and every job that you do this summer will mean one less "rush job" next fall!

General Electric Company, Heating Section 3167, *Air Conditioning and Commercial Refrigeration Divisions, Bloomfield, New Jersey.*

GENERAL ELECTRIC



fuel oil & oil heat

particularly affecting the drilling of oil wells;

3. The necessity for manufacturing fuel oil in preference to gasoline, to meet the minimum needs for homeowners, war plants, and the oil-fueled merchant marine and Navy;

4. The tremendous military demands for petroleum, which because of censorship have not been revealed to the oil industry, and already, exclusive of huge amounts of aviation gasoline and lubricants, is equivalent to about 25 per cent of the total current production of crude oil in the United States. This demand has an even greater effect because the manufacture of special war products, particularly aviation gasoline, requires a disproportionate amount of the capacity for the manufacture of motor gasoline.

"The oil industry and the Petroleum Administration, in less than 18 months, have completely revolutionized the petroleum transportation system to the East Coast," Mr. Boyd said. "This is one of the most amazing achievements of the entire war effort by any industry.

"Within a short time now, probably within 30 to 60 days, as soon as the Big Inch pipeline is delivering crude oil at full capacity to the East Coast, and the Little Big Inch is delivering products halfway, the oil industry will be able to deliver enough petroleum to meet presently anticipated military demands, and what is authoritatively determined to be all essential civilian and industrial needs. The whole area east of the Rocky Mountain area can then be successfully placed on some new but equivalent basis subject only to the available supply and military demands."

With the full support and approval of the Petroleum Industry Marketing Committee representing District 2 (the Middle West), Petroleum Administrator Harold L. Ickes has set a minimum goal of 15,000,000 barrels as the annual saving from the conversion of industrial and commercial oil-burning facilities in the Middle West to the use of coal.

The conversion effort will be augmented by a jointly sponsored PAW-War Production Board program contemplating a reallocation of fuels among various industrial consumers now using either gas, oil or coal or combinations of those fuels, the effect of which also will be a net saving of fuel oil.

Industry approval of the 15,000,000 barrel conversion goal was given at a recent meeting of the District 2 Marketing Committee in Chicago.

"It gives us something that we can shoot at together," said Deputy Petroleum Administrator Ralph K. Davies. "Furthermore, it emphasizes pointedly the fact that both the Government and the petroleum industry fully recognize the necessity for conserving every last barrel of fuel oil possible."

Altogether, some 1,976 industrial and commercial oil burning facilities in the Middle West already have been converted to the use of a substitute fuel. Included among the accounts converted are 30 petroleum refineries, which have voluntarily switched over from the use of oil as a refinery fuel to the use of some acceptable alternate with a resultant annual saving of 4,643,000 barrels of oil.

The Mid-Western conversion program is being handled through PAW's District Two headquarters office in Chicago, which has been staffed with a competent force of combustion engineers. No industrial plant is requested to change to a substitute fuel until its facilities have been inspected by one of these engineers.

In making the determination as to whether conversion should take place, special consideration is given to: (1) Availability of substitute fuel. (2) Availability of the critical materials needed in the conversion. (3) The cost of the conversion job.

District 2 includes the States of Ohio, Kentucky, Tennessee, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Oklahoma, Kansas, Nebraska, South Dakota, and North Dakota.

Distribution Division Plans Active Schedule of Work

FOLLOWING CLOSELY the organization of the Distribution Division at Chicago in June, officers and committee chairmen met at New York on July 12, to outline policy, establish an immediate work program, and get its activities under way. Frank Spencer, national chairman; Gus Burrell, vice-chairman; Lester Scott, chairman of the Legislative Committee; Ted Rowland, chairman of the Executive Committtte; Lionel Jacobs, chairman of the Post-War Planning Committee; and E. E. Hadlick, director of OHI and vice-chairman of the Legislative Committee, met with C. E. Lewis, president of OHI; Ray Horan, secretary of the Distribution Division, and C. F. Curtin, OHI secretary and treasurer.

Mr. Lewis told the Distribution officials of the work now being done by the parent organization on public relations, and in its contact with government officials. He outlined the steps taken prior to the revision of L-74, and the work that was projected by OHI. Much of this work will be tied into the activities of the distributors' Legislative Committee in the future, and all effort coordinated to get maximum benefit for the industry.

Immediate work will seek a clarification of some of the recent government orders. Discussion brought to light dissatisfaction with L-74 as recently amended on the grounds that it complicates rather than simplifies the legitimate movement of burners, and makes necessary form-filing and delay that serves no visible purpose. The meeting also asked for a reclassification of buildings converted from private residences to apartment houses to the "residential" group, since these wartime converted residences are not true commercial buildings but residences, even though they may now house four families.

Policy-wise the Distribution Division endorsed the stand recently taken by the Atlantic Coast Conference in condemning wholesale prosecutions of oil dealers for infractions of rationing regulations under the stress of the program's inception. The division will ask that prosecutions be dropped except where violation was deliberate and malicious on the part of the distributor. It was the opinion of the meeting that nearly every oil distributor in the country had been forced to violate the letter of the regulations at some time during the last heating season, and that these violations were particularly necessary during the fall and early winter when the regulations were poorly understood, and while machinery for the operation of fueloil rationing was inadequate. For these reasons it is felt that

Your post-war home will know no bounds

That tomorrow's home will be scientifically lighted, dustless, draftless, and air-and-sound-conditioned, now seems inevitable to many authorities. But its greatest contribution to better living will, they predict, come from its *structural flexibility.* Literally, it will know no bounds!

Many architects agree that the only fixed unit of this home will be a central control room, or "power-house". Around it can be built as many rooms of varying dimensions as you desire—each chosen from your dealer's stock of pre-fabricated sections that permit a wide variance in individual home design. Extra rooms may easily be added any time your family's growth or desires dictate.

The interior of this home will be amazingly adaptable, too. Walls and partitions may be moved at will. One room may be made into two, or two into one . . . or the side of your house opened to the garden . . . quickly and easily.

Naturally, this post-war home will require comfort and convenience equipment in keeping with its functional modernity. Delco Appliance will provide it, once peace comes. Until then, *"Victory Is Our Business".*

Delco Appliances include Automatic Delco-Heat (oil-coal-gas), Delco Water Systems, Delco-Light Power Plants and Delco-Light Batteries.

DELCO APPLIANCE

ROCHESTER, N. Y.

DIVISION of GENERAL MOTORS

fuel oil & oil heat

wholesale prosecutions will work a hardship on an industry that was more a victim of circumstance than criminal. It is recognized, however, that cases of willful violation of regulations to obtain an unfair or competitive advantage should be prosecuted.

Procedure to apply for relief from pressing manpower shortages will be investigated and recommendations made to the membership in bulletin form. Reports indicate a present shortage of service men and drivers among dealers, and the situation is becoming increasingly serious as men currently are drafted or leave to enter draft-deferred industries.

The meeting also expressed the belief that problems of petroleum supply and distribution should be placed in a separate government bureau, preferably in the hands of one man who would be responsible for coordinating all oil problems much as the rubber program now is being handled. It was felt that the seriousness of the petroleum supply problem indicates the need for full-time effort by an executive charged with the responsibility of securing an adequate oil supply.

V

A Prophecy On Heating

AFTER THE WAR
WE PREDICT:—

That Homes of the *future* will be heated by:

1. Radiators
2. Warm Air
3. Stoves
4. Coils in Floors or Ceiling
5. Possibly a few with Rube Goldberg systems

Nothing unusual in our predications? That's correct, because we still feel that no new fangled system will obsolete those mentioned above—at least for a good long time to come.

Burnham Boilers and Radiators are still available for replacements.

BURNHAM BOILER CORPORATION

Irvington, New York
Dep't O

Zanesville, Ohio
Dep't O

Burnham Boilers

The next meeting of the Distribution Division will be held at the Blackstone Hotel, Chicago, at 10 A.M., October 11, the day before the regular semi-annual meeting of the Oil-Heat Institute.

OHI Directors Vote Constitution Changes

DIRECTORS of Oil Heat Institute approved changes in the constitution and by-laws to permit representation of the Distribution Division, at the July 13 meeting at New York. Changes will have to be approved by the membership at the semi-annual meeting in Chicago, October 12, before becoming final.

It is proposed that the board of directors be made up of eleven manufacturer members, five Accessory Division members, and five Distribution Division members. The Executive Committee will be composed of four manufacturers, two accessory members and one distributor.

A proposal also approved was that Distribution Division representation be by any elected representative, rather than by the president of the local associations as presently provided.

Frank Spencer, Chicago, and E. E. Hadlick, Minneapolis, were appointed to the Board of Directors to fill the unexpired terms of two manufacturer members who have resigned. Several dealer organizations were elected to membership in OHI.

The Semi-Annual meeting of the Institute will be held at the Blackstone Hotel, Chicago, on October 12. Members of the Distribution Division and the Accessory Division will meet on October 11, and a dinner is being planned for that evening.

N. E. Group Promotes Regional Meetings

REGIONAL MEETINGS to be held in various sections of the territory it covers, are being held by the Oil Heat Institute of New England. The first such session, conducted by President Don J. Edwards and Executive Secretary Fred N. Beckwith, was held July 15 at Fall River, Mass.

After a dinner the meeting was given to a discussion of the 1943-44 fueloil rationing program, ration banking, WPB

orders and regulations, and subjects covering all conditions governing the operation of business. The new Distribution Division of Oil Heat Institute of America was described to members, and the plan of action outlined.

◈

Oregon Association Becomes State-Wide

MEETING at Portland, July 14, the oil distributors branch of the Oregon Fuel Merchants Association expanded its activities to encourage state-wide membership of oil and oilburner dealers in the Branch. The expanded distributor group is being affiliated with the Distribution Division of Oil-Heat Institute.

Three representatives of the Oregon association who attended the organization meeting of the Distribution Division at Chicago spoke at the meeting, and outlined the aims of the national group.

◈

Industry Committee and WPB Discuss L-74 Revision

DISCUSSION at the July 23 meeting of the oilburner industry advisory committee with officials of the WPB Plumbing and Heating Branch centered on the recently revised L-74. It was explained that the order as now written makes possible a continuous inventory of surplus parts as well as completed burners, and an effort is being made to move these stocks before authorizing the manufacture of new equipment.

A three-man committee was appointed to consider possible ways and means of using the large dealer stocks of completed burners to replace old and wornout equipment, and to offer recommendations. The committee will report at an early date.

Members of the Advisory panel are J. J. Cheviron, Lochinvar, Detroit; R. C. Collins, May, Baltimore; Joseph Hearst, ABC, Chicago; H. C. McIntyre, Auburn, Auburn, Ind.; R. Johnston, Johnson, Philadelphia; C. E. Lewis, Delco, Rochester; W. A. Matheson, Oil-O-Matic, Bloomington; Edward Errath, Heil, Milwaukee; E. Bailey, Jr., Nat. Airoil, Philadelphia; and Sid Harvey, Valley Stream, L. I., N. Y.

It is understood that Johnston, Lewis and Matheson will meet soon to decide on recommendations for changing L-74 to facilitate its operation in the field.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

NOW – ***You can make Completely Automatic Deliveries under War Time Rationing Conditions with the "Oilration Calculator."***

Developed by practical fuel oil men for all fuel oil dealers. *Not* a Degree Day System.

HOW IT WORKS

After a delivery has been made to a customer, turn the dial and read the exact *date* on which the customer's tank should be refilled, according to the allotment he has received from his ration board. This date is then used for the next delivery and the customer is mailed a card advising him of this date so that he may know how long his oil should be made to last.

What The "Oilration Calculator" Does For You

1. **Makes possible automatic delivery service with a minimum amount of clerical work.**
2. **Your customers know at all times just how they are keeping in balance with their allotment.**
3. **No more phone calls or inquiries from customers wanting to know how they stand.**
4. **A special feature permits budgeting oil ration for customers using oil for both heat and domestic hot water.**

What The "Oilration Calculator" Does For Your Customer

1. **Gives him a 'plus' service by helping him keep within his allotment.**
2. **No more last minute rushes to the Ration Board.**
3. **No more unnecessarily cold homes for fear of using the oil coupons too quickly.**

SOLD ON A 10-DAY MONEY BACK BASIS FOR - - - - $22.50

SEND COUPON WITH YOUR CHECK TODAY!

MODERN HEAT & FUEL COMPANY
4415 CHESTNUT STREET
PHILADELPHIA 4, PA.

Enclosed find check for $22.50 for one "OILRATION CALCULATOR" to be sent to:

NAME .....

ADDRESS .....

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Survey Shows Too Few Men To Handle Emergency Service

WESTCHESTER County, the residential area immediately north of New York City, has been feeling the pinch of oilburner service manpower shortage, and the pinch has been getting tighter by the day as men have been inducted into the armed forces, or left oilburner service work to take draft-deferred war jobs. To find out exactly how critical the service man shortage has become, a committee of the Westchester Oil Trade Association has just completed a survey of firms doing service in the county. Results show present manpower insufficient to perform adequate emergency service work.

From the seven classified telephone books that cover the county, the committee compiled a list of 165 firms offering oilburner service and covered them with a mail questionnaire. There were 66 returns representing a 40% reply, and of the remainder it is believed half are out of business. A number of the questionnaires were returned by the post office marked "Out of Business" and other dealers replied they had suspended service operations due to shortage of service men. Committee members familiar with the oilheating business in the county can identify only five companies doing any appreciable volume of service who are not represented in the returns. Westchester County, embracing a representative group of medium and small cities and towns, is believed to be typical of conditions generally along the East Coast.

The 66 reporting service firms take care of 47,339 domestic and commercial burners. The committee feels that this figure may be 10% higher than the actual burners on the lists, due to overlapping accounts and turnover in service contracts from year to year. No attempt has been made to identify each individual account, or to make a break down between domestic and commercial burners.

Assuming that each burner serves six people, 284,000 people are dependent on continued oilburner operation for heat, slightly less than half the county's population. Since the burners are both commercial and domestic, it is believed that the estimate of six people per burner is conservative.

Reporting service companies employed 183 service men in 1941, had 138 men last season and now have 104 service men, representing a net loss of 43% of their manpower in two years. These companies have lost 85 men to the armed services, and 50 men to other industries, but have hired 56 men during the last two years to partially replace the 135 men who have left. The newly hired men came almost entirely from other service organizations who have gone out of business or let their men go. This is borne out by the fact that the present 104 men working on oilburner service range in experience from 2 to 17 years, with an average experience of 10.6 years. If the 56 replacements had been inexperienced this average of oil burner experience would have been much lower. Dealers report that it takes an average of 3.1 years to train a serviceman.

In Westchester County dealers have employed a service man in the past for each 250 to 300 burners serviced. In 1941 these organizations had a man for each 259 burners in their care. By last heating season each man was servicing an average of 343 oilburners, or more than formerly had been considered good practice. If there are no more losses in the service force, each man now will have 455 burners to service, or nearly twice normal.

Westchester service organizations recognize that they cannot hope to operate normally for the duration of the war. They report a need for 122 men to give adequate emergency service, and 135 men if they are to do summer cleanups and prepare for the heating season. Present manpower is 14.7% below that required to give adequate emergency service. It is reported that each man can handle an average of 388 burners on an emergency basis, but not 455.

To add to service managers' anxiety, 72 of the present 104 service men now working are between the ages of 18 to 38 and liable to call into the armed services. Of these men, 95 are married and 9 are single, but this difference in status is not likely to be important for draft deferment by the end of this year.

The manpower survey committee for the association, consisting of Thomas A. Brown, Sentinel Oil Co., Mount Vernon; Charles J. Goyert, Charles J. Goyert & Co., White Plains; and Philip Levene, Pelham Coal & Oil Co., Pelham Manor, has released the summary of its findings shown in the table.

SUMMARY OF MANPOWER SURVEY

by

Westchester Oil Trades Association

Questionnaires sent to oil burner service companies	165
Questionnaires completed and returned	66—40%
Estimated firms now out of business	50—30%
Domestic and commercial burners serviced by reporting firms	47,339
Service men employed in 1941	183
Average burners serviced per man—259	
Service men employed last heating season	138
Average burners serviced per man—343	
Service men now employed	104
Average burners serviced per man—455	
Minimum number of men required for adequate emergency service	122
Average burners serviced per man—388	
Minimum men required for adequate "fuel-saving" service	135
Men lost to armed forces	85
Men lost to war industries	50
Experienced men hired since 1941	56
Experience of men now employed (range from 2 to 17 years)	10.6 yrs. avg.
Time required to train service men (range 2 to 5 years)	3.1 yrs. avg.
Men now employed between ages 18 and 38	72—69%
Married men now employed	95—91%
Single men now employed	9— 9%

Since new Tuthill Pumps and Fuelstats for domestic use are limited for the duration, the next best bet is to have your present equipment checked and repaired for "like new" performance.

This helpful reconditioning service is obtainable through our authorized field service stations or at the factory. It's the economical way to keep Tuthill equipment operating dependably.

★

Tuthill Pumps
are serving
Army • Navy
Air Force
Merchant Marine

TUTHILL PUMP COMPANY

939 EAST 95th STREET • CHICAGO, ILLINOIS

fueloil & oil heat

Via Radio Newspapers and Magazines Uncle Sam is telling folks: "You will have less fuel to burn this winter prepare now, see your local heating expert." The Field Draft Control cuts fuel consumption 5% to 25%. When you install a Field Control you help yourself your customer and your Uncle Sam The complete line covers your entire market . . .

Write or wire us today for details. The Field Control is easily installed and the market is almost unlimited . . —

FIELD Conserves FUEL
COOPERATE WITH UNCLE SAM'S FUEL CONSERVATION PLAN...

FIELD CONTROL DIVISION

H. D. Conkey & Co.
Mendota, Illinois

Check Burner Adjustments When Oil Specs. Change

OIL REFINERS AND DISTRIBUTORS are finding it difficult to exercise the same close control over fuel oil specifications that they pride themselves on during peace time. And just a hint of this starts certain fuel oil users crying, "The last load of oil was no good!"

"Is it just as good?" and "Does the quality match the price?" are questions asked when, to keep them warm, a different grade oil is delivered to skeptical burner owners in place of the grade delivered usually.

The man who knows his service ABC's can assure burner owners that the typical pressure burner can perform well on oil lighter or heavier than generally has been delivered as quality No. 2 or 3 domestic fuel oil.

Straw-colored No. 2 oil may have been used in a pressure burner that heats a six-room house. If necessary, for the duration the house can be well heated on No. 1 fuel oil, on No. 2 heavier than has been used before, or on a No. 3 oil of decidedly dark color and of the highest viscosity for Grade 3.

Following a switch in oil, the burner should be tuned to match the new oil. This avoids breakdowns, smoke and soot, and other trouble. A tune-up makes sure the burner does not give less heat for the oil used.

With the same nozzle and same atomizing pressure as were used before, a bigger fire when it is switched to oil of higher viscosity. Switching to thinner oil, such as kerosene or No. 1 fuel oil, gives a smaller flame. Pressure nozzles perform contrary to the expectations of those who have not learned their characteristics.

The "heaviest," or more properly most viscous, oils that pressure burners can use at high efficiencies and with trouble-free operation call for higher atomizing pressures than are used ordinarily. Up to 175 or 200 lbs. atomizing pressure gives good results on many installations that use oils of the highest viscosities practical for medium size to large pressure burners. Use of 150 lbs. atomizing pressure is good practice for even small domestic installations which burn oil not especially heavy.

Installations which tend to produce soot deposits in the flues, because of faulty burner design or installation or poor fireboxes for example, may be expected to form more soot when heavier oil is burned. The flue passages then may need more frequent cleaning.

Clean Heavier Oils

Straining and filtering the oil is more important with thicker, heavier oils. If this is not given proper attention, the atomizing slots of the nozzle will plug frequently.

Use of thinner, less viscous oils invites adjusting for higher CO_2 and lower firebox draft because generally these oils burn clean with relative ease. It is not uncommon for an installation to produce appreciably higher efficiency on light oil than on the heaviest oil suitable for the burner. On one job, though the kerosene being tried contained about 3% less heat per gallon than the particular No. 2 oil burned previously, the higher efficiencies realized with kerosene produced almost 10% more heat per gallon of kerosene than had been obtained with No. 2 oil. There were defects which prevented efficient use of No. 2 oil.

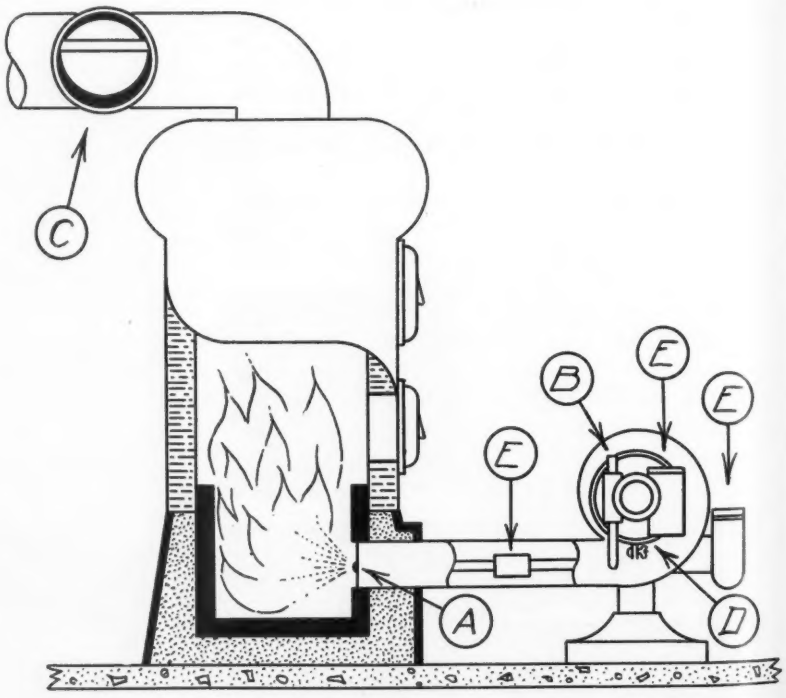
Here is a tune-up program for a burner which has been switched to heavier fuel oil:

1. Check the nozzle (see A in the accompanying diagram). A nozzle of lower capacity may be needed. Problems about nozzles for especially viscous oils should be taken up with oil burner and nozzle manufacturers. Regular service care includes making sure that every atomizing slot in the nozzle is clean.

2. Check on the advisability of adjusting for higher atomizing pressure (adjustment B in the diagram). Use an adjustment range up to 175, or even 200 lbs. in accordance with the preceding suggestions. Use a pressure gauge on the oil burner every time you make adjustments. Guessing is no good.

3. Check the smokepipe draft adjustment. Higher draft may be needed with heavier oil. To increase the draft controlled by a swinging disc draft regulator (the type shown as C), adjust so that the disc tends to stay closed more than it did before. On many jobs, however, the lowest setting of the draft regulator gives best results and maximum fuel economy, and may be used even with the heaviest oils being delivered for domestic burners.

4. Adjust the air damper on the burner



(generally at the blower inlet, as at D) for the least air that does not give chimney smoke. Go outdoors to check on this. With the proper adjustment, the chimney will smoke if the air damper on the burner is set a fraction of an inch farther towards the closed position. Adjustments should be made with the firebox red-hot and after the burner has been running steadily for at least 15 minutes. Skill and experience, plus help from a CO_2 analyzer, are needed to arrive at the best final setting for the air damper.

5. Clean all the strainers. Some burners have three, at the locations marked E in the diagram: at the nozzle or in the line to the nozzle; as part of the fuel unit; and mounted on the burner and piped into the main feed line. Many outside tank installations have an oil strainer located where the suction line comes through the basement wall. Repair or replace any strainer parts you find defective. Using heavier domestic oils, on many installations an additional strainer or filter of outstanding ability and capacity is needed. Be prepared to clean the strainers more frequently when thicker oils are used, perhaps twice a season for small installations and more frequently where upwards of 5,000 gallons of oil is used yearly.

Switching to lighter oil, such as to kerosene-like or No. 1 oil on a job that has been burning No. 2, a higher capacity nozzle together with somewhat lower atomizing pressure often is used to excellent advantage. Atomization may be excellent with atomizing pressures as low as 60 lbs. Often the burners are outstandingly quiet with the pumps working at such low pressures and with the motors carrying light loads as a result. Avoid white, skimpy, wasteful flames that sometimes are found where pressure burners are using kerosene or No. 1 oil. Achieve the rich, red flames that tell you there will be smoke from the chimney if you cut the amount of air going to the flame.

◈

Penn Gets Second Award

EMPLOYEES and officials of Penn Electric Switch Co., Goshen, Ind., were again honored by the Army-Navy Production Board by the renewal of their Army-Navy "E" Award. This second coveted award is in the form of a white service star affixed to the "E" Flag and signifies continued excellence in the production of war material.

In a letter to the Company, C. C. Bloch, Admiral, U.S.N. (Ret.), Chairman, Navy Board for Production Awards, stated: "The men and women of the Penn Electric Switch Co. have achieved a signal honor by continuing their splendid production in such volume as to justify this renewal to their award. In the first instance it was difficult to win the Army-Navy 'E' and by meriting a renewal, the management and employees have indicated their solid determination and ability to support our fighting forces by supplying the equipment which is necessary for ultimate victory."

◈

Frederick Metz, 57, who for the last 10 years conducted an oil burner and plumbing business in Cape May Court House, N. J., died July 14.

W. A. Thompson, 74, owner and operator of the Thompson Fuel Service, of Bala-Cynwyd, Pa., died July 8, in Philadelphia. He had been in the fuel supply business since about 1910.

READER HELPS. Interesting and Valuable Books and Reprints

1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL
Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size **50c**

"Herkimer Service Manual." Now you can buy this famous manual. It is a complete service and installation guide for oilburners, gas furnaces, and stokers written for the expert as well as the beginner. It is distinguished as the basis of the Herkimer Institute courses **$4.00**

"Oilheating Handbook," by Han Kunitz. Newly revised edition. Clear and concise explanation of oil burner systems and classification. Discusses combustion and heating problems, surveys, installations and retail selling **$3.50**

"Herkimer Coal Burner & Stoker Manual." Covers installation procedure. Also detailed explanation and remedy for 18 common trouble complaints with many subheads under each title. Includes a double-page stoker complaint and trouble diagram. This is a highly valuable tool for dealers and service men to use on the job. Prepared by practical men from regular daily experiences. 40 pages. Pocket size. Black, heavy paper cover **$1.00**

"Oil Fuel in 1960?" Reprint of famous article from March Issue, refuting "oil shortage" claims. Excellent for local distribution to regular and potential oil and burner purchasers **10c**

BEACON BOILER REFERENCE BOOK
Contains 7116 listings of boilers and boiler-burner units up to 2,000 sq. ft. steam and equivalent hot water—new, old and obsolete. Complete ratings and specifications on 195 makes, 412 trade names. Particularly valuable regarding old and obsolete models. Gives model number and name, rating, firing rate (coal and oil), heating surface, firebox dimensions, floor to crown sheet, grate size, floor area, base height, chimney dimensions, smoke pipe diameter and whether boiler is steel or cast iron. Also, name and last known address of manufacturer and indication of whether the model is obsolete, or when it was made. 554 pages. Handy size for desk or brief case. Sturdy binding....**$3.00** per copy; **$3.25** if sent C.O.D.

REDUCING FUEL OIL BILLS
This amazing booklet will help you show homeowners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service **50c**

"Oilburner Combustion Chambers." Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages **50c**

"Short Cuts to Heat Loss Data." When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring **25c**

PRACTICAL OIL BURNER SERVICE
64 pages of the best articles published in AIR CONDITIONING & OIL HEAT during recent years. Excellent if you want to increase your service business during the war. Many topics covered. How to balance steam systems, increase efficiency, test units, baffle boilers and furnaces, adjust burners, figure combustion chambers, calculate stack loss, etc. **$2.00**

KNOWING THE A TO Z OF CO_2
This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high CO_2 rating and a low stack temperature. Be efficient and use this up-to-date booklet in your service work **$1.00**

SERVICE ON ALL MAKES OF OIL BURNERS
This book is essential in your repair and service work. Gives 10 detailed analyses of the most common basic service problems and shows you how to solve them efficiently **50c**

"Selling and Handling Fueloil." A 32 page booklet covers fueloil distribution from bulk plant to customer's tank. Covers planning and operating bulk plants, operating tank trucks, selling fueloil, specifications and variables, automatic deliveries, etc. **50c**

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

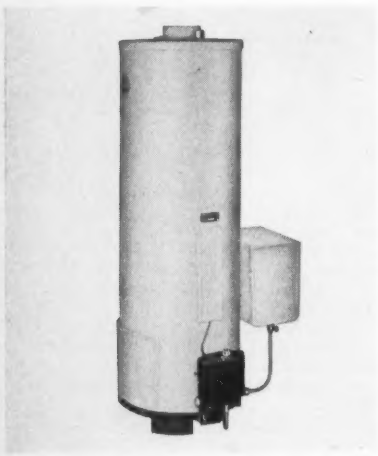
FUEL OIL & OIL HEAT • 232 MADISON AVENUE, NEW YORK CITY, N. Y.

New Products

Water Heater New

A NEWLY designed "Gilco" automatic oil burning water heater has been announced by the J. L. Gillen Co., Dowagiac, Mich. This heater meets the specifications and requirements of the various government buying agencies,—including the Army, Navy, Maritime Commission, the FPHA and is listed as standard by Underwriters Laboratories.

To comply with the conservation of steel, the Gilco water heater features roll board (composition asbestos fiber) for the casing. Other features are: The Draft O Light, which automatically regulates the draft and also serves as an opening for lighting the burner. Rock Wool insulation; heavy steel tank, hot dipped galvanized inside and out; the "Gilco" Burner; the water temperature adjustment knob and the snap action control with automatic float. The "Gilco" is available in 20, 30, 40 and 50 gallon sizes. The 20, 30 and 40 gallon sizes have a 7" burner and will recover approximately 30 gallons per hour, while the 50 gallon size has an 8" burner and will recover approximately 40 gallons per hour, based on an 80° temperature rise, according to the manufacturer.



Oilfired Gilco

Valve Motor Switch

BARBER-COLMAN CO., Rockford, Ill., has announced the Micro Pressure Switch for proportioning control of motor-operated valves, program switches, etc., for the regulation of steam, air and gas pressures. Some applications include control of steam boilers automatically fired by oil burners, suction pressure of multiple Freon compressors, and regulation of head pressures in liquid level control. It consists of a single-pole double-throw 3-wire instrument with positioning solenoid. Pressure sensitive bellows mechanism mounted on a bakelite sub-base and enclosed in a metal case for surface mounting. Built-in condenser protects contacts. External adjustment possible, but setting may be locked by means of internal screws. The control circuit is a simple 4-wire, single-pole double-throw for 3-wire operating circuit plus additional wire for positioning solenoid.

Micro pressure control

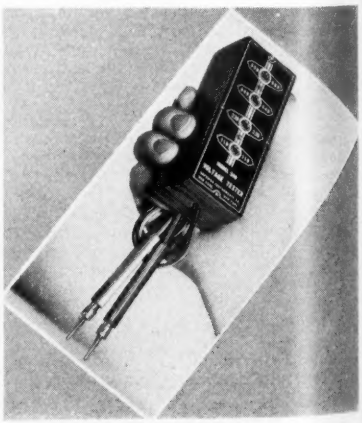
Ship Heater

AIR DEVICES, INC., New York City, have announced the "Agitair Marine Hot Water Generator," a small fully-automatic, oilburning unit which supplies hot water for heating and other purposes on small craft. Firing rate is from 1 to 1.5 gph, with radiation capacities from 400 to 1000 sq. ft. hot water. Total weight is but 330 lbs., and construction is compact.

Oil is burned under positive pressure in a carborundum combustion chamber through which the flame has a corkscrew travel downward, the firing unit being at the top. Construction features give a double pass over large copper coils, said by the manufacturer to be corrosion-resisting, with a stainless steel shell. The burner is known as "Dyna-Flame" and is of the conventional gun-type with special adaptations to this unit, the nozzle being directed vertically downward. The entire unit is insulated with 1½" of rock wool. The manufacturer states that this unit adapted to a forced feed hot water heating system has been found satisfactory for small ships.

Voltage Tester

A NEW Model 590 "Voltage Tester" has been announced by Superior Instruments Co., New York City. According to the manufacturer, it automatically indicates whether the voltage is 110, 220, 440, or 660; whether it is a.c. or d.c.; if the appliance connected in the line is "open"; which leg is grounded; whether fuse is blown; when one side of appliance is grounded; indicates excessive leakage between a motor and a line; and when a three phase motor is running erratically due to a blown fuse. It is supplied in a housing of wood and a panel of etched steel. Weight is about 2 pounds.



Tests electric current

Spot Remover

SPEEDI-DRI and Sol-Speedi-Dri have been announced by the Waverly Petroleum Products Co., Philadelphia, Pa. Speedi-Dri is an oil and grease absorbent, in powder form, to be spread over oil leaks. According to the manufacturer it absorbs oil from all type floors and draws oil from old accumulations. It is claimed to be a deodorant, and is non-combustible. Sol-Speedi-Dri is a special drying compound used for soluble oil stains and spills.

Calculates Ration Use

MODERN HEAT & FUEL CO., of Philadelphia, has developed a new fuel oil calculating device for making automatic deliveries practical under fuel oil rationing, by eliminating K Factors and Degree Days, which have been replaced by a "Balance Figure."

It consists of an 18" square case, with a stationary top and bottom section, between which a circular, proportioning chart revolves.

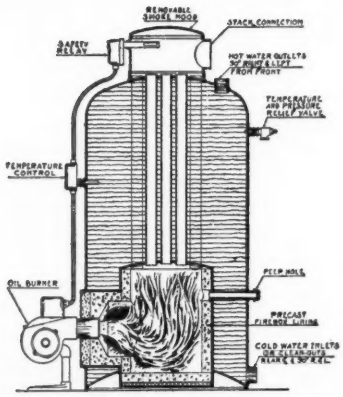
The top section has two openings through which the figures on the circular chart can be read. On the hair line of the first opening the balance figure is set, and the next delivery date is read at the hair line of the second opening. The designer claims that any contingency that may arise, such as reducing or increasing the value of coupons, and supplementary coupons, can be quickly compensated for on the calculator, and that it is also possible to pick up a new customer in the middle of the year, or any time during the year, and schedule the deliveries from that point on, based on the net number of coupons he has remaining at that time. The designer states that a clerk can be taught to operate it in a few minutes and that the entire operation of striking the balance figure and finding the next delivery date takes but a few seconds.

According to the designer it enables the fuel oil dealer to go back to automatic deliveries, permitting lower trucking costs and eliminating out-of-oils, excessive delivery costs, and additional help, besides allowing the dealer to advise his customers how long they must make each delivery last if they wish to remain in balance and avoid running out of oil, with no currently valid coupons.

A complete clerical card system is also available, which incorporates the functions necessary to operation under rationing. Delivery postings, clerical coupon standings, scheduling of the next delivery, and post card advisement to the customer of how long the oil should last, are all done at the same time.

Flares Steel Tubing

EVERHOT Products Co., Chicago, has announced a flaring tool, known as the "Flaremaster," specially designed to produce correct 45 deg. double lap flares for SAE flare-type and inverted flare-type connections on Bundy and Bundyweld tubing, and on a new soft steel copper coated tubing which the company brought out last year, called "Bundyflex." The tubing is available in 25 foot coils or 12 foot lengths, in sizes from 1/8" o.d. to 5/8" o.d. It is claimed by the manufacturer that Bundyflex may be used on oil burner feed lines.



This is the famous

AQULUX-225

... our most popular Heavy-Duty model. It is fully automatic. Has an 80% Efficiency Rating. Capacity—270 g.p.h. at 100° rise. Tank holds 230 gallons. Other Aqulux models have capacities up to 540 g.p.h.

WANTED by U.S. ARMY!

140,000,000 Gal. HOT WATER *every Day*

... for hot lather to wilt whiskers ... hot showers to loosen aching muscles ... hot dishwater for weary KP-s ... hot towels in the quiet hands of Army Nurses. Few items are more essential to the comfort, health and morale of fighting men.

What the exact daily consumption may be, only a magician could say. It can't be far from the figure named above which is based on 20 gallons per man for a 7,000,000 man army.

This much we *do* know; Aqulux Water Heaters built in our plant are supplying a *lot* of it. Army Posts all over America are using our big, wartime Aqulux models because of their high efficiency, their fuel saving, and because they are built with a minimum of essential materials (no insulation; no jackets; no galvanizing).

There is a double satisfaction for us in this assignment ... because it utilizes all the skill and experience we have gained in forty years of building fine oil-burners ... and because we know it contributes to the health and happiness of the men who are fighting our fight. Unspectacular, yes! But indispensable. Even though it may win no actual battles ... *hot water is "ammunition," too!*

If you are working on water-heating problems for the government or for an essential industry, perhaps we can help you. We'll gladly try.

S. T. Johnson Co., 940 Arlington Ave., Oakland, Calif. and 401 No. Broad St., Philadelphia, Pa.

S. T. JOHNSON CO.

40 years of engineering and building fine Oil Burning Equipment

I-B-R Research Shows Way To Hot Water Economies

MARKING THE BEGINNING of the fourth year of cooperative research on steam and hot water heating at the University of Illinois, the Institute of Boiler and Radiator Manufacturers has released a report on the research completed at the I-B-R Research Home at the University.

This typical six-room home was built in 1940 with a conventional one-pipe, forced circulation, hot water heating system having sufficient radiation to offset the maximum calculated heat loss when average radiator temperature was 200 degrees and a 10-degree drop occurred in each radiator. The system was operated with and without flow control valve. Though the circulator was sized to operate continuously at 10 degrees below zero, it was observed that at this temperature the circulator ran only 12 to 13 hours a day. It was found that the radiators were supplying only about 50% of the heat loss of the house, the rest being supplied by lights, people, inside chimney, cooking, etc. This discovery suggested making a sizable reduction in the amount of radiation installed, and reducing the size of the main between radiator connections to increase unit friction head and get proper diversion of water through radiators by using standard tees at supply and return connections.

Last heating season the system was revised to reduce radiation by 30%. With a 20-degree drop allowed in radiators the whole system could be laid out with one-half inch pipe except in the ¾-in. trunk main. Standard half-inch cast-iron tees were used at radiator connections, and the total weight of iron used in piping and radiation was reduced about 30%.

The revised and simplified system operated satisfactorily last season with connected radiation sufficient for only 70% of the circulated load. Reducing the amount of radiation increased the frequency of the circulator operating cycle, and increased the average radiator water temperature in each case. Comfort conditions in the house were the same as with the larger system, with the exception of a longer warm-up period in the morning after night set-back. It is concluded that this indicated considerable economies in forced hot water heating for well-built, post-war homes. It points to the possible use of smaller boilers, smaller oilburners, smaller radiators and piping.

Further work is being conducted on the operation of gravity hot water plants for the basementless house.

◈

Army Designs Conversion Burner For Tents

A SIMPLE oil firing unit, designed for operation with liquid fuels ranging from gasoline to diesel oil has been developed by the Quartermaster Corps to convert the standard coal-burning army tent heating stove into a smokeless oilburner, according to a recent issue of "Army News," a digest of technical data issued by the Publications Branch of the U. S. Army.

Along with the unit, the Quartermaster Corps has designed an "adaptor," or coupling device, attached to a long tube which permits the standard five-gallon field gasoline container to be used as a fuel tank for the stove.

The fire unit is designed to fit into the base of the stove when the coal grates are removed, and is equipped with three air intake vents to obtain better combustion and consequently less unconsumed oil with its resulting smoke. The fuel is fed into the fire unit by gravity through a safety float valve which regulates and controls the amount of fuel reaching the burner.

The coupling device which adapts the gasoline container for use as a fuel tank is fitted with a vent pipe to allow air to flow into the container as the fuel flows out.

Tests have shown that the new burner will provide heat comparable with that from the maximum amount of coal the stove will hold. But unlike the coal, it will burn without smoking, which makes it suitable for use in any theater of operations from deserts to snow-covered mountains, without danger of smoke disclosing the location of troops.

Amendments Adapt RO-11 to New Rationing Program

SIX AMENDMENTS to fueloil rationing order No. 11 have been adopted during the last month, all of which adapt the order to the provisions of the new rationing program.

Amendment No. 67, effective July 1, provides for ration banking and defines who must and who may open such accounts. It covers the circumstances under which ration checks may be issued and accepted.

Amendment No. 68, also effective July 1, makes minor changes to bring renewal procedure into line. It eliminates the necessity of writing serial numbers on coupons; voids the requirement that consumers return stubs to the local boards and requires dealers to keep records of deliveries for two years instead of one.

Amendment No. 69, also effective July 1, sanctions use of OPA Form R-1167 for simple reapplication for heat and hot water ration; raises the area ceiling to 3000 sq. ft. for the first person; provides for refiguring the ration for small houses and changes the number of zones from 4 to 10.

Amendment No. 70, effective July 14, allows rations to fuel incubators, brooders, growing batteries and other farm equipment, regardless of when installed.

Amendment No. 71, effective July 7, eliminates the classification of secondary supplier, and calls all oil distributors other than primary suppliers, dealers. Provision is made to permit surrender of coupons in the industry wthin 15 days after transfer instead of five, though delivery of coupons in advance of fueloil transfer is limited to five days. Allows issuance of exchange certificates by boards instead of inventory coupons to dealers after July 1.

Amendment No. 72, effective July 24, puts a deadline of August 31 on the use of outstanding inventory coupons. No fueloil can change hands in exchange for inventory coupons after August 16, and all outstanding inventory coupons should be deposited in ration bank accounts before August 31.

Supplement 1, Amendment 6, effective July 1, establishes the value of unit value coupons on Class 4, 5, and 6 coupon sheets at 10, 50 and 250 gallons, respectively, for Period 1.

BE SURE OF YOUR BOILER SPECIFICATIONS

USE THE AUTHORITY

The BEACON BOILER REFERENCE BOOK contains 7116 listings of boilers and boiler-burner units up to 2000 sq. ft. steam and equivalent hot water,—new, old and obsolete—

Page Heading:

BOILER MANUFACTURER

Rating		Minimum Firing Rate		Heating Surface Sq. Ft.	Firebox		Floor to Crown Sheet	Grate Size	Floor Area	Base Height (In.)	Chimney		Smoke Pipe Diam. (In.)
Steam	Water	Gals. Oil per hr.	Lbs. Coal per hr.		Width	Length					Size (In.)	Height (Ft.)	

554 Pages. 1 1/4" Thick. 8 1/4" x 5 1/4" Overall.
Handy for Desk, Pocket or Brief Case.
Eliminates Your bulky Boiler Files.

COMPLETE RATINGS AND SPECIFICATIONS ON 195 MAKES . . 412 TRADE NAMES . . 7116 BOILERS FOR THE FIRST TIME IN A SINGLE VOLUME

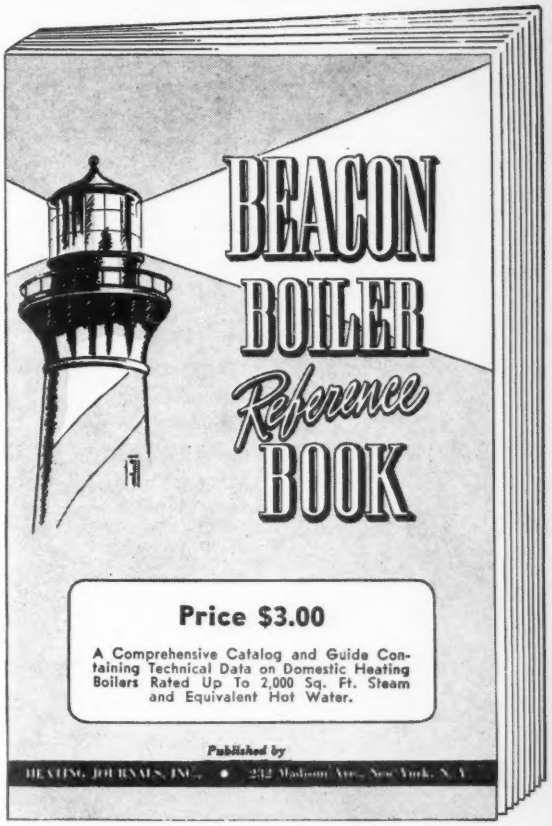
You will find this volume a handy, useful working tool. Strongly bound; heavy paper cover; easy to use, because the names are in large bold type. This book will stand punishment and its accurate and complete contents will serve you well. It is necessary equipment for every well equipped dealer, jobber, contractor, salesman, service and installation man. Remember, if it saves one wasted trip *back* to the shop, or jobber, it's worth its cost!

● ● ●

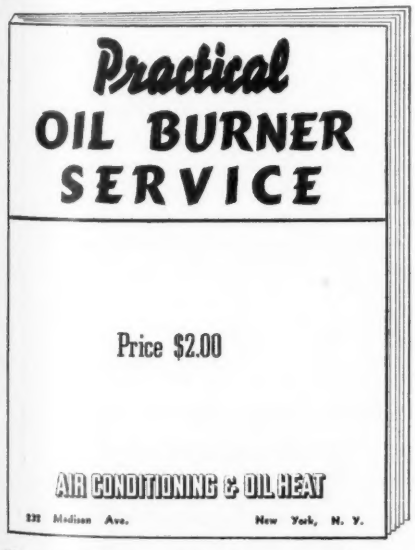
This book will earn its cost in a very short period because it will: SAVE TIME; SAVE PHONE CALLS; SAVE UNNECESSARY TRIPS and CONVERSATION. Everybody interested in or working with boilers, burners, stokers, or heating equipment should have this necessary reference. ORDER YOUR COPY TODAY!

● ● ●

Also given in the listings are the trade names or numbers of the various series made by the manufacturers; in most cases of older boilers, the date of the catalog and whether it is obsolete; location or disposal of manufacturer; in many cases the source of parts. Shape of boiler and whether steel, cast iron, etc., is shown for practically all boilers, in addition to the data shown above.


BEACON
BOILER
Reference
BOOK
Price $3.00
A Comprehensive Catalog and Guide Containing Technical Data on Domestic Heating Boilers Rated Up To 2,000 Sq. Ft. Steam and Equivalent Hot Water.
Published by
HEATING JOURNALS, INC. • 232 Madison Ave., New York, N. Y.

ORDER YOUR COPY TODAY . . . PRICE $3.00 . . . C.O.D. $3.25



8½" x 11½". Printed on white, 70 lb. paper with black ink. Many drawings and illustrations. Heavy paper cover. Strongly bound. 64 pages and cover. A serviceable book.

AN EXCELLENT SERVICE GUIDE

Handle service efficiently and profitably. Get information from men who know service problems and how to lick them.

Subjects covered: How to Balance a Steam System. How and Why of Venting Steam Radiator. Theory of Oil Combustion and CO_2. How to Get Accuracy. How to Use an Efficiency Chart. How to Figure Combustion Chambers. How to Install for Greatest Efficiency. How to Baffle a Boiler or Furnace. How to Test An Oil Burner Installation. How to Adjust a Burner without Instruments. How to Calculate Stack Loss. How to Determine Firing Rate. Effect of Firing Rate on Cost. How to Service Commercial Burners. How to deliver Fuel Oil Automatically. The Meaning of Draft. How to Check a Burner. How to Survey a Job for Estimating & Installing a Burner. *This book is a reprint of some of the best articles published in AIR CONDITIONING & OIL HEAT in recent years.*

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or check be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

FUELOIL & OIL HEAT

232 Madison Ave., New York City 16. Lex. 2-4566

Timken User Booklet Explains Oil Rationing

TIMKEN Silent Automatic Division of The Timken-Detroit Axle Co., has prepared a new rationing booklet—under the title of "Digest"—in question and answer form to help its users gain a clear understanding of the 1943-44 fuel oil regulation.

Such questions as, "How much fuel oil will I be allowed?"—"If I think I require an additional amount of oil to avoid undue hardship, what then?"—"If I am the occupant of an exceptionally large house, will my ration be increased?"—"Has there been any change in the coupon set-up?"—"During what periods may the various coupons be used?"—are all answered in an authoritative manner. In addition, the booklet contains a map showing heating zone boundaries, and tables giving the coupon validity dates for the different heating zones.

Information is also given on "winterproofing" homes by means of insulation, weatherstripping, storm doors and windows.

This booklet, the fourth in a series of helpful hints for users, is being mailed to all Timken Silent Automatic owners as a further service by the Timken factory and the Timken Dealer organization. Sample copies may be secured by addressing Timken at Detroit.

◆

N. E. Governors Ask End of Conversions

THREATENED by a coal shortage next winter, the Governors of the six New England States, meeting July 16, in New London, Conn., adopted a resolution calling for a halt in further conversion of oil heating plants.

"We are convinced," the Governors asserted, "that present conditions do not warrant any further conversion. The greatest shortage threatened for next winter is hard coal."

A federal coal allocation system made public for the first time at the conference was supported by the chief executives of the New England States.

The resolution urging a complete halt in conversion of oil heating plants went a step farther than a recommendation by Charles J. Potter, assistant deputy solid fuels administrator, that only "large" conversions involving more than 10,000 barrels on 420,000 gallons a year of oil consumption be undertaken hereafter.

Potter and his chief, Thomas J. Thomas, associate deputy solid fuels administrator, both expressed confidence that bituminous coal supplies would be adequate next winter, but they were uncertain about anthracite.

Potter explained that the new federal coal control system, scheduled to be put into effect soon after Sept. 1 as an admittedly "stop-gap" plan, would allocate 90% of last year's shipments to distributors and dealers, with the 10% balance being shipped to acute shortage areas through federal coordinators operating in geographical zones with the cooperation of state fuel commissions. New England would be one such zone.

Although declaring that New England may expect to get about as much hard coal as it got last winter, Potter acknowledged that dealers had no reserves in stock as they did a year ago and that anthracite was not moving well current-

DON'T PLAY WITH FIRE

We've Got "It"

Our Armed Forces HAVE to live Dangerously—But there is no need for YOU to take chances with Fire when you can have the safety controls of your burners put back in First Class condition by Sid Harvey's corps of experts. The cost is low and the service prompt.

All kinds of Rebuilt
PUMPS, VALVES, MOTORS, and CONTROLS
in stock for Immediate Exchange.

Send for Price List and Catalog of Harvey
REPLACEMENT PACKAGES.

FREE New Customer literature to help you make extra profits with rebuilt units. The first of this new series is ready. Send for a sample today.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

HERCO OFFERS DEALERS
POST-WAR PLANNING NOW!

MANY oil burner distributors and dealers are laying plans to be "in on the ground floor" when the peacetime building boom creates a burner boom . . . and when production may, conceivably, lag behind demand.

Herco is now engaged 100% in war work. But we are planning post-war production so that we can supply our customers speedily when normal business is resumed.

The Herco burner . . . engineered for oil-thrift . . . operating efficiently and economically in homes today . . . will be a big seller in tomorrow's burner market.

Write Herco for complete information on post-war dealer franchise.

HERCO OIL BURNER CORP., LANCASTER, PA.

Service in Wartime
Sales in Peacetime

HERCO
The Oil-Thrifty
OIL BURNER

. This, he added, was because the nation lost 25,000,000 tons of hard coal through the recent strikes, which he referred to only as "difficulties at the mines."

Changes in Government Orders and Regulations

WPB-547, a new and simplified form, supersedes PD-1X for use by distributors in getting priority ratings for replacing inventories. Simplification of the form, according to WPB, will cut the amount of time and work required to file the form and process it. It has been reduced in size to fold to 8½ x 11 inches, so it will fit into a standard typewriter. PD-1X forms will be accepted until August 1, after which all applications for ratings to replace inventory and replenish stock must be made on WPB -547. Officials of the Wholesale and Retail Trade Division warn against filing forms not completely filled out. To facilitate answering, all spaces are numbered and corresponding numbers listed on the instructions.

L-187 has been amended, effective July 1, to allow the casting of low-pressure heating boilers on a month-to-month basis at a rate not in excess of 100% of the weight of materials used in the corresponding calendar month of 1940. These provisions will be in effect for the last six months of this year.

L-173 has been amended to ease the restrictions on production of space heaters. Oilfired space heaters may be produced in unlimited volume for the armed services. Other production is limited by L-23-c, but manufacture for other purposes than housing now is permitted up to 32% of the amount of materials by weight used in the manufacturers' base year. No heaters may be made for civilian use with a capacity in excess of 30,000 Btu per hour. Floor furnaces and wall furnaces may be made in unlimited quantities for housing as well as for the armed services. Gasfired space heaters are under the restrictions of L-23-c.

STOVE RATIONING will be nation-wide for all heating and cooking units about the middle of August, instead of the middle of June as originally planned. The new rationing will cover domestic cooking and heating stoves for coal, wood, oil or gas, with the exception of certain special type units. Coal and oil stoves have been rationed in the 32 oil-rationed states since last December.

Standard for Insulating Board

A REVISED Commercial Standard (CS42-43) has been adopted by the Structural Fiber Insulating Board industry, effective August 25th, 1943, according to an announcement by J. W. Medley, of the Division of Trade Standards of the U. S. Dept. of Commerce. It is the second revision of the original Standard, adopted in 1932, and covers building board, lath, roof insulation board, interior board and sheathing. The Standards cover general and detail requirements including physical properties, methods of sampling and testing, packing and labeling.

Explains Electronics

INCLUDED in the electronics educational program being sponsored by the West-

DO YOU HAVE AN OIL BURNER PROBLEM?

AN OIL BURNER HANDBOOK

(*L. J. Whelan*) *Master Plumber and Heating Contractor*, 554 Atlantic Ave., Brooklyn, N. Y. Everyone knows, of course, that the use of oil-burners has been definitely restricted and conversion to coal-burning plants seems to be the order of the day. However, there are innumerable cases where such conversion cannot be carried out, and oil-burners will continue to function, although in smaller numbers than before. It is doubly important that those units which will be operating this coming winter on oil, should be so adjusted and regulated that the maximum heating efficiency will be obtained without fuel waste, and the importance of this fact contributes greatly to the timeliness of this book. Both domestic and industrial burners are covered, and one outstanding feature of the work is that it is written in the language of the installer and worker, can be understood by any home owner and is equally of valve to the experienced man or the beginner in the field. Chapter headings include: Fuel Oil; Combustion; Storage Tanks; Installations; Servicing; Controls, etc. Part three is headed "Care of the Oil Burner" and gives information on proper starting, regular care, and problems which may arise in connection with the maintenance and operation of oil burners. Diagrams and drawings are used to good advantage throughout the 245 pages of the volume. Cloth bound.

$2.50

in cash, check, or money order

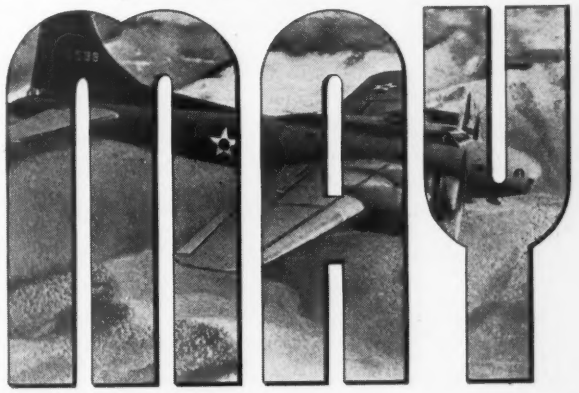
FUELOIL & OIL HEAT
232 Madison Ave.
New York, N. Y.
Gentlemen:
Enclosed find $2.50 for my copy of An OIL BURNER HANDBOOK by L. J. Whelan. Please mail to

Name .....

Address .....

.....

QUIET MAY



OIL BURNERS

● On land, on sea, and in the air . . . Quiet May Oil Burner's famed Gerotor pump is doing a fine job for Uncle Sam. When this war is won, Quiet May will be back on the job for you too.

MAY OIL BURNER CORPORATION
Baltimore, Md.

inghouse Electric & Mfg. Co., E. Pittsburgh, Pa., are two booklets: "The ABC of Electronics at Work," a 36 page treatment of tube construction and how it works; and "Electronics at Work," a 44 page description of typical applications of electronics to industrial methods and processes. Also included as a part of the program is a motion picture under the title "Electronics at Work," covering in general the subject matter of the two booklets. Copies of the booklets may be obtained from the company.

◈

Stove Industry Report Outlines Restrictions

GOVERNMENT CONFERENCES, regulations and restrictions as issued day to day have been condensed, as they affect the stove industry, by the Institute of Cooking and Heating Appliance Manufacturers, Inc., Washington, D. C. The booklet covers the two years from June 1941, to June 1943.

In an introduction attention is called to the various appointments of industry panels and committees to advise and consult with officials, though little of the advice and data ever was used. "It is our contention," the booklet says, "that had the advice of the industry members been accepted in good faith at the beginning, the war effort would have been promoted, the public would have been better served, and the work of the agencies would have been reduced."

◈

City Buys Oil Reserve

NEW BRITAIN, Conn. will be a fuel oil jobber next winter as a result of action taken by its Common Council. Approving a plan sponsored by Mayor George A. Quigley, the local governing body, by a 12-1 vote, authorized the purchase of 500,000 gallons of oil to be kept in tanks in Cromwell until needed.

In order to obtain the $45,000 needed for purchase of the fuel, the council levied a special tax of slightly under one-half mill. Alderman W. G. Gibney, majority leader, hurried to explain, however, for the benefit of the public, that the special tax will never get into the taxpayer's bills, that they will not have to pay it.

It was announced the fuel would be ordered immediately from Rockliffe Oil Company and held in that company's tanks in Cromwell from which local dealers may buy it at the same wholesale price the city is paying when there is need for it next winter. There will be both range and furnace oil in the tanks.

◈

High Temperature Insulation

MUNN & STEEL, INC., Newark, N. J., has brought into production a new line of heavy-duty high temperature pipe coverings and block insulation under the trade name of "Mascolite." It is a basic-bonded vermiculate body for service at below 2000 deg. F. Among the advantages claimed are high insulating efficiency, freedom from shrinkage in service, no harm from water, and a unique corrugated inner wall surface which provides an air film between the hot pipe and the body of its covering.

◈

W. W. *Vanderveer,* president of Allied Oil Co., Cleveland, has been named director-in-charge of PAW District 1.

These books are
FREE!
to all —
OIL BURNER DEALERS
FOR DISTRIBUTION TO HOME OWNERS
Help Your Customers SAVE FUEL!

Imprinted with dealer name and address, these books are filled with fuel-saving suggestions that build good will for dealers and make profitable accessory and service sales. ORDER YOUR BOOKS NOW. The supply is limited. Use your letterhead.

WAYNE "V-DAY" LINE WILL BE COMPLETE

OIL-FIRED — GAS-FIRED — STOKER-FIRED
FURNACES — BOILERS — WATER HEATERS

New designs being tested and proved set new standards in heating efficiency for small homes.

LINE UP WITH WAYNE FOR POST-WAR PROFITS

WAYNE OIL BURNER COMPANY
928 GLASGOW AVE., FORT WAYNE 4, INDIANA

Uncle Sam Demands Oil Conservation
TORIDHEET CO-OPERATES
BY PRODUCING THE SENSATIONAL
LIBERTY LINE

Now you can sell and install oil heating equipment for the purpose of reducing the consumption of fuel oil. You can replace, without priorities, the oil-hog that is gorging fuel oil in a manner delightful to Hitler and Hirohito.

But be sure the oil burner or unit you install was *made* to reduce oil consumption. Don't experiment. Install Toridheet. The Toridheet Liberty Line was *designed* to cut heating costs.

Write at once for complete information.

CLEVELAND STEEL PRODUCTS CORP.
TORIDHEET DIVISION CLEVELAND, OHIO
Oil Burners ★ Air Conditioning Units ★ Oil-Burner Boilers
Coal and Gas Furnaces ★ Water Heaters

Readers' Forum

MODERN HEAT & FUEL CO.
Philadelphia, Pa.

Editor:

After our first year of experience in fuel oil rationing we have come to the following four conclusions. One, the old method of making automatic deliveries is unsatisfactory under rationing. Two, some sort of delivery system that would work is preferable to having customers order their own deliveries. Three, no automatic delivery system, old or new, can be made to work without the cooperation of the customer. Four, the customer cannot intelligently cooperate unless he is given assistance in the form of an advisory service, through which he may know at frequent intervals throughout the season that he is burning oil at a rate in keeping with his ration.

In our opinion, the problem of scheduling deliveries under fuel oil rationing, where each customer is given a specific allotment of fuel oil for a heating season, necessitated a new approach because the customer's available oil supply was frozen to a definite maximum amount. So, too, should be the heating season in which this fixed amount of oil was available.

If the days of the heating season were laid out on a line, with the cold days of the year represented by proportionately larger spaces, and another line of equal length was made to represent the customer's total allotment in gallons, by appropriate subdivisions, then it would be possible on any day of the season to check how much oil should have been burned. By the use of this principle it would be possible to assure any particular customer that if he made each delivery of oil last until such an advanced date that we advised him of at the time of each delivery, he would have oil available until the last day of the heating season that heat was normally required, whether the winter was normal, warmer, or colder than normal.

Our next concern was the amount of clerical time required to make the necessary calculations to furnish this advisory service to all of our customers. To cut this time to a minimum, we developed a rotary calculating device, operating on the above principle, that would, at the turn of a dial, furnish the exact date that each new delivery of oil should last. We planned to advise each of our customers after each delivery promptly, by post card, of this date. Our first advice card will go out to our customers after their initial or fill-up delivery, with the request that they order their second delivery by attached return card. Those of our customers that order their second filling on or about the advised date we will consider as being desirous and able to burn their oil in accordance with their allotment, and subsequent deliveries to those customers will be made automatically on or about the advised date.

GEORGE CLEMENT.

◈

Atlantic Coast Group Protests OPA Trials

IN A LETTER to OPA Administrator Prentiss Brown on July 15, Clyde G. Morrill, secretary of the Atlantic Coast Oil Associations Conference protested the prosecution of various oil companies

WARNING!

To be sure of having your nozzle stock complete at the start of the coming heating season—*Order Now!*

High priority war orders are taking most Monarch Nozzles and therefore quantity orders with A-10 ratings can seldom be shipped promptly. However, we try to ship *emergency* orders for one or two nozzles immediately.

MONARCH MFG. WORKS, INC.
E. WESTMORELAND AND SALMON STS. PHILADELPHIA, PA.

"Pincers Movement"

Here at Oil Equipment Laboratories we are getting ready for the post-war markets with a pincer movement of our own.

We are applying the experience we have gained in the long years of good burner building, against the precision production methods we have learned in war-work with vastly increased shop facilities, to crack the problem of better made, better designed equipment for our dealers.

We are seeking new ideas, new products and new outlets. If you want to work with a growing and potentially great organization of young men, get in touch with —

OIL EQUIPMENT LABORATORIES
Elizabeth, New Jersey

fueloil & oil heat

for alleged violation of rationing regulations during the last heating season, and transmitted a resolution adopted by the conference asking that pending actions be dropped except where violation has been willful and criminal in character. The letter recognizes the necessity of rationing, and the need to make the system work, but objects to "the establishment of government that prosecutes citizens without due process of law before courts recognized as courts of justice established by our Legislatures and Congress."

The resolution points out that 75% to 80% of eastern fueloils are distributed by small independent distributors who were hindered in their compliance with the regulations by the tardy issuance and delay in distribution forms and educational material. Therefore, it is suggested that compliance with the new program be encouraged by an educational program, rather than to attempt to frighten dealers with prosecutions. Where violations appear to be willful and criminal, it is suggested that the case be reviewed by a board consisting of a representative of OPA, one from the industry and one from the public, which would send the case to the regularly constituted courts.

The conference also suggests that suspension orders be discontinued for violation as too drastic, and inimical to the prosecution of the war.

◈

G. E. Gregory, formerly director of sales, has been advanced to the newly created post of vice-president in charge of commercial development, of the Owens-Corning Fiberglas Corp., Toledo, Ohio.

Wildcat Calculations

(*Continued from page 20*)

ent system of estimating was adopted. It is peculiar that this fact never has caused alarm until the present.

Another statistic that Mr. Lovejoy has overlooked in his otherwise complete analysis of the figures is that the industry has increased enormously its efficiency in the discovery of oil. Successful wildcats represented only 10% of the total wildcats drilled in 1937, and 11% in 1938. Successful wells dropped to 8.7% in 1939, recovered to 9.9% in 1940, and became 15.4% in 1941. Last year 16.1% of the wildcats were successful, a praiseworthy accomplishment and a scientific advance of which any oil man should be proud.

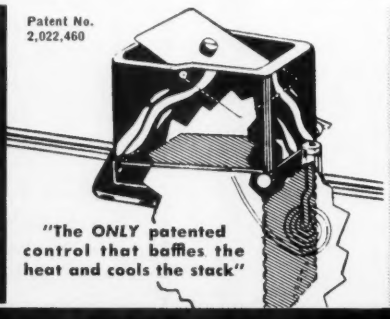
Last April when Mr. DeGolyer first presented his figures on wildcat wells drilled, Sumner T. Pike, Director of the Fuel Division of OPA, wrote a memo to Director Brown in which he outlined the statistical holes in the table, thus:

"Last year we had almost as many wildcat wells drilled as our all-time peak. We found about as many new fields as in any previous year. During the last year and at the present time exploration crews and equipment have been used to the full with an intensity which promises to be limited only by shortage of manpower and available equipment. It is true that the number of barrels discovered in new fields last year looks disappointing. However, that is almost always true of the most recent year. A large field is almost never thoroughly explored so that its full size is known until several years, sometimes five or six years, after it is discovered. Somebody has evidently taken the Secretary (Ickes) for a statistical ride in presenting the figures. It must be true in the nature of things that the most recent year almost always looks like the poorest year because no one knows the magnitude of what was found so recently. This is particularly true in 1942, since during that year steel and drilling equipment was made freely available for discovery purposes and very many new fields were discovered; yet when it came to developing those same fields, the producer ran up against the restrictions on equipment which were caused by the shortage of steel, so that in general we know much less about the full size of last year's discoveries than in a normal year."

Logic would seem to dictate a campaign against WPB for more steel, and against WMC for more men to develop the new fields discovered in the last few years, if production is truly threatened. More wildcats will serve only to discover new fields, often far from pipelines or other available transportation, that can contribute little to the immediate supply of oil until they are developed. But development is subject to all the restrictions of other businesses, and steel in particular is hard to get. Instead of working directly on the limiting factors, all effort is being made to increase the price on the supposition that the other problems will disappear with the rise in price. Anyone can get attractive odds that the talk of oil shortage and exhaustion also will disappear when the increase is won, regardless of its effect on actual drilling.

Nobody will deny the need to discover new oil fields, and it is apparent that new fields are being discovered. Last year there were nearly 80% more fields discovered than in 1937, and 20% more fields discovered than in 1940, the next best recent year. The fact that these new fields have

SAVINGS
UP TO 40%
FOR YOUR CUSTOMERS
The HERD
THERMOSTATIC
DAMPER CONTROL
cuts fuel costs
15% to 40%
Guaranteed in writing!



"The ONLY patented control that baffles the heat and cools the stack"

HERD UTILITIES • INC.
303 CANAL ST., PROVIDENCE, R. I.
Distributors in Principal Cities

PROFITS
for YOU!
The HERD
THERMOSTATIC
DAMPER CONTROL
will give you sales NOW
when you need them most
Write TODAY for details

not yet been developed to contribute importantly to the figures on reserves, should not be alarming. There will be other new fields discovered in 1943, but few expect that their contribution to the reserve statistics will be as great as 1942, or any other previous year. Further exploration, development and defining of the fields will have to be completed before their full extent and production is known.

There has not been a single recent year when the total oil added to reserves has not been greater than production in that year. But there has not been a recent year when the first estimates of oil in newly discovered pools have equalled that year's production. Estimates of oil in any pool grow with its first years of productive life. The result is the present puzzling spectacle of a country with its greatest reserves in history already in sight, and with hundreds of new fields discovered and waiting to be developed, being told that it is on the verge of petroleum bankruptcy. It would seem that something is wrong besides the price of crude oil.

However, it should be kept in mind that there is considerable evidence to support an increase in the price of crude in spite of discovery statistics, rather than because of them, and there is great need for the industry to continue its excellent job of exploration and discovery. Certainly, a crude price increase would encourage more exploration, and would, therefore, further improve the statistical picture. But when the increase is granted it should be for reasons of petroleum economics that have not yet been emphasized, and not to save sensitative Washington necks that now are out on doleful predictions.

◈

New Yorkers Play

NEW YORK OIL HEATING ASSOCIATION held its annual outing at the Pomonk Club, Flushing, N. Y., July 27, with about 150 in attendance. Arrangements were handled by Dan Bierman, outing committee chairman, assisted by Tony Sbare, George Knittel, Larry Murphy, Ed Bruns, Matty Convisor and Joe Ross.

Tom Lewis won the golf award with a 92. A tense, closely contested soft ball game featured the day, with the OPA team, captained by Al Evans, winning from the PAW team, lead by Larry Murphy by 28 to 9.

Lunch and dinner were served. A short program under the direction of President Harry Evans followed dinner, with a session of dominoes completing the evening.

KEEP THE
HOME FIRES BURNING

This coming winter is likely to be tough on oil burner owners. Not only are fuel oil rations uncertain, but the perfect performance of the oil burner itself was never so necessary.

It is our job to keep Sun Heat Furnace Oil delivered *on time* to our many customers, and we will try our utmost to fulfill our obligations.

Every man who knows the complex crankiness of oil burners, ought to impress on every user of oil heat, the necessity of having his burner inspected and adjusted *before* the heating season begins.

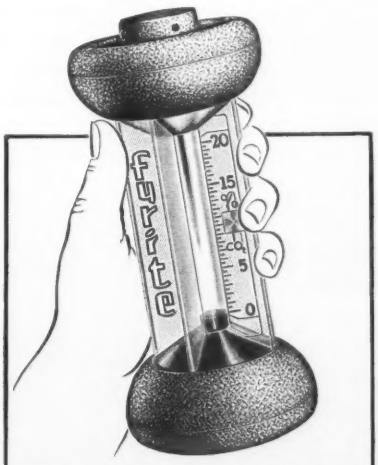
Try to make this winter as trouble-free as you can, so far as oil heat is concerned. Advertise your services and do every job right.

In fact it is patriotic to do so. Let's all be patriotic.

SUN OIL COMPANY
Philadelphia, Pa.
Manufacturers of Sun Heat Furnace Oil

SUNHEAT
FURNACE
OILS

SUN OIL CO., PHILADELPHIA

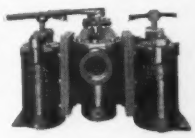


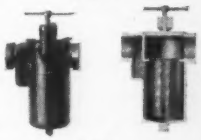
The CO_2 ANALYZER
That Simplifies Combustion Tests
Companion Draft Gauge and Mercury Thermometer also available.
Bacharach Industrial Instrument Co.
7000 Bennett Street • Pittsburgh, Pa.

KRAISSL
PRODUCTS
OFFER PROVED PERFORMANCE

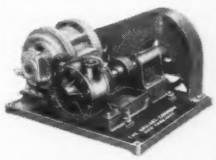
Kraissl Class 72
Strainers and Filters

Single and duplex types for suction and discharge service. Any practical degree of filtration. A necessity on every fuel oil line to protect pumps and burner nozzles. Available for low pressures as well as high pressures up to 500 pounds hydrostatic test.


Duplex


Single

Kraissl Class 60 Heavy Oil
Pumps



Known and used as standard equipment for many years wherever independent pump and motor sets are required and as booster pumps for pump type burners.

Kraissl-Trumbull
#522 Fuel Pump Unit

for gravity type oil burners having a burning capacity of not more than 3 gallons per hour. A rugged, dependable, wall pump approved by Underwriters' Laboratories, Inc.

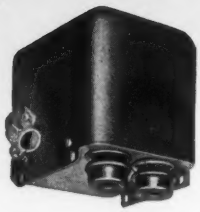
Write for literature and dealers prices.

THE KRAISSL COMPANY
INCORPORATED
295 Williams Ave., Hackensack, N. J.

DONGAN TRANSFORMERS

They Insure Dependable Performance

On leading makes of oil-burners Dongan Transformers have for years been standard equipment. This is because of their demonstrated ability to render dependable service. Acquaint yourself with Dongan's special construction features. It's the transformer you'll want in your post-war product.



Voltages from 5,000 to 15,000. A variety of sizes and mountings. Special types built to specifications.

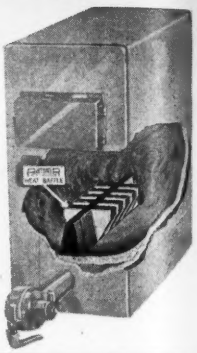
Dongan Electric Manufacturing Co.
2981 Franklin Detroit, Mich.
"The Dongan Line Since 1909"

WRITE FOR LITERATURE

SAVE UP TO 30% of FUEL With **AGITAIR**

Get lower stack temperatures and higher CO_2 with the most practical Heat Baffle.

Easy to install. No auxiliary equipment, fastenings or hangers required. Rests on top of combustion chamber and deflects hot gases to sides of boiler or furnace to produce scrubbing action.
Length: 19 in. Reducible to 16 in. by reducing end sections.
Retails at $9.00; or $15.00 installed. Excellent records to prove our statements. Send for literature.



DEALERS WANTED.

AIR DEVICES INC.
17 East 42nd St., New York, N. Y.
2326 So. Michigan Ave., Chicago, Ill.

Home Front Service

(*Continued from page 22*)

pany charged the owner, finally, only for repairs to the control, but more than $40 worth of labor had been wasted because of improper first diagnosis of the trouble.

"It can cost me $40 if one of you men make the wrong diagnosis of the trouble on just one of the service calls you make tomorrow," concluded Binks. "That's why I'm asking you to concentrate on becoming experts at diagnosing trouble. The training you get at these sessions will be good to you after the war. Don't forget that.

"You men will be working at the same work you're working at now. After the war, you hope to continue going ahead with automatic heating and air conditioning. You'll want good jobs, work that pays well and that allows you to go around with clean hands, clean shirt, neat clothes, and a good car. Snap into it now and become expert at trouble diagnosis and you are headed in the right direction already!"

At this point the new "Service Form," of the type shown was presented.

The girl at the office fills out the first four lines on getting the service call. If he receives word of the call over the phone, the service man fills in the four lines according to the data given him, and the copy he is carrying becomes the final record.

On the job, the service expert fills in lines five to nine. The signature of the owner or the owner's representative goes on the tenth line.

The big thing is to arrive at the proper reason for "Cause of Trouble." Of course, "Remedy Applied" must match the diagnosis of the trouble.

The report keeps a check on, and permits the organization to take pride in, speed in answering service calls. Items 1, 4, and 7 give the time the call was received at the office, the time the service man was contacted and given the call, and the time he arrived on the job. Leaving time is also on the report.

The "Service Summary" is posted in the office and all the men are asked to study it every morning, when complete data for the previous day's calls have been added to it.

This summary serves another purpose. Once each week, at a regular service meeting which all the men attend, the owner of the company goes over every call in detail, asking the man who answered it to give all the facts connected with the trouble. "Repeat calls" stick out like a sore thumb, at these meetings, generally to the discomfort of any man who diagnosed a call improperly in the first place. When, as sometimes happens, there are three or four service calls in one week on a burner, the boss asks for a volunteer who will "go out and really fix it this time." When a burner breaks down repeatedly because of the need for parts or repairs recommended, but which the owner has not ordered because of the expense involved, an effort is made to settle the matter. "Condition of Equipment" on the Service Report calls for a service man to make a record of defects which he believes should be remedied to prevent chances of additional service calls.

Geared up now to render more efficient service, and on a fair way to operate at a modest profit instead of an oversize loss, this company has additional plans for streamlining its service department, even

OIL SOOT E-Z DESTROYER

CUT OIL HEATING COSTS

Simply spray E-Z and soot vanishes instantly. Customers always satisfied. One trial will convince you.

"EASY TO USE— ECONOMICAL TOO!"

DISTRIBUTORS: *Write for fine proposition.*

HEALY-RUFF COMPANY, 797 Hampden Ave., St. Paul, Minn.
Enclosed find check ( ) money order ( ). Send the following prepaid:

No. 1 pkg. ....$1.00 Name .....
Address .....
No. 5 pkg. .... 4.50 City ..... State.....

Every specialty for Forced Hot Water House Heating Systems and Service Water Heating. Send for catalog and price sheet.

BELL & GOSSETT CO.
MORTON GROVE, ILL.

THE VICTORIOUS GENERAL!

He wins his battles against the "filth" column which causes unnecessary trouble and service calls. He also wins for the dealers and distributors, their struggle for profits in wartime. Easy to sell! Easy to install! Wide profit margins!

The GENERAL effectively filters all sticky gums, dirt and waxes in the fuel line, thus preventing pump and nozzle fouling.

MODEL 2A-300 for all Power Oil Burners

Excellent design—Fine workmanship. A good record of service to the Field. Dependable.

General Filters, Inc., Detroit, Mich., 8699 W. Chicago Blvd.

GENERAL FUEL OIL FILTER

Write for Literature

Listed: Re-Examination Service, Underwriters Laboratories

Model 2A-300

n wartime. Modern methods of handling he problems of manpower shortage and ervice department profits must be emloyed by many service organizations beore these organizations can concentrate n inaugurating methods of jacking burner efficiencies to maximum.

◈

Propose Standard for Oilfired Floor Furnaces

A PROPOSED Commercial Standard for Oil Burning Floor Furnaces Equipped with Vaporizing Pot-Type Burners, No. TS-3518, has been circulated to the industry for written acceptance by I. J. Fairchild, Chief, Division of Trade Standards of the U. S. Department of Commerce.

The scope of the Standards is wide, covering design and construction, installation and performance. Methods of testing, including instruments to be used, oil specifications, and other details and general information are listed, even to a table of altitude correction factors for barometric pressures. Informative labeling and guarantees are also listed fully.

The purpose of the standard is to establish minimum specifications for guidance of manufacturers, distributors and users, according to Dr. Fairchild, and to provide a uniform basis for guaranteeing compliance through the use of labels or certification. Those complying will be listed in the printed pamphlet among the official acceptors, provided the number of acceptances received warrants publication.

The standard provides that "No published, listed or labeled rating shall be based on efficiencies of less than 70%." This 70% efficiency is determined by dividing the total heat in the oil by the actual input into the heated area. Ratings on floor furnaces will be expressed, "Output ..... Btu per hr. at ..... draft with CS No. ..... oil."

◈

U. S. Department of Labor April Fueloil Prices

FIELD INVESTIGATORS for the Department of Labor periodically check prices of principal fuels in several cities in each section of the country. Getting retail quotations from a number of dealers in each market, the prices are averaged and published. Those in the table that follow were taken April 15 (cents per gallons):

	Range	No. 1	No. 2	No. 3
Boston	10.42	10.25	9.00	9.00
Bridgeport	...	...	8.80	8.80
Fall River	10.70	...	9.70	...
Manchester	11.10	...	9.70	...
New Haven	10.70	...	8.90	...
Portland, Me.	10.20	10.12	9.00	...
Providence	9.95	9.98	8.90	...
Baltimore	...	9.66	9.00	...
Buffalo	10.70	10.70	10.00	10.00
Newark	...	10.50	9.00	9.00
New York	...	...	9.09	9.09
Philadelphia	...	9.94	9.00	9.00
Rochester	11.00	11.00	9.70	9.70
Washington	...	10.30	9.40	...
Chicago	8.49	7.96	7.96	7.96
Cleveland	...	8.55	...	8.03
Detroit	...	7.93	...	7.42
Des Moines	...	8.36	7.75	7.75
Milwaukee	8.50	8.50	8.00	8.00
Minneapolis	8.61	8.13	8.10	8.10
Omaha	...	7.80	7.20	7.20
St. Louis	8.26	7.74	7.24	7.24
St. Paul	8.63	8.14	8.10	8.10
New Orleans	...	8.76	7.21	7.21
Norfolk	...	10.00	8.80	8.80
Richmond	...	10.30	9.00	9.00
Denver	...	8.16	7.14	...
Portland, Ore.	...	7.30	6.30	...
Seattle	...	7.78	6.75	...

GILCO

Automatic

OIL-BURNING WATER HEATERS FOR GOVERNMENT PROJECTS

J. L. GILLEN CO.

GILCO

DOWAGIAC • • MICH.

PREFERRED DRAFT-A-JUSTOR

THE ORIGINAL. STILL THE BEST.

HUNDREDS OF THOUSANDS IN USE.

Holds the draft constant in the fire box.

Scientific draft control for the smallest to the largest jobs.

Stove, domestic, and commercial sizes from 4" to 24" in diameter.

Industrial sizes from 24" x 24" to 5' x 12'.

WRITE FOR LITERATURE AND TRADE PRICE

PREFERRED UTILITIES MFG. CORP.

33 West 60th St., New York, N.Y. Boston Office: 839 Beacon St.

Advertisers' Index

Air Devices, Inc. 48
American Tel. & Tel. Co. 23

Bacharach Ind. Instr. Co. 47
Bell & Gossett Co. 48
Brodie Co., Ralph N. 11
Burnham Boiler Corp. 32

Cleveland Steel Products Corp. 44

Delco Appliance Div. 31
Detroit Lubricator Co. 9
Dielectric Products 50
Dongan Electric Mfg. Co. 48

Emerson Electric Mfg. Co. ..... Inside Back Cover

Field Control Division 35

General Electric Co. 29
General Filters, Inc. 49
Gillen Co., L. J. 49

Harvey, Inc., Sid 42
Healy Ruff Co. 48
Herco Oil Burner Corp. 42
Herd Utilities, Inc. 46

Johnson Co., S. T. 39

Kraissl Co., Inc., The 47

May Oil Burner Corp. 43
McDonnell & Miller 18
Mercoid Corp. 6
Minneapolis-Honeywell Regulator Co. ..... Back Cover
Modern Ht. & Fuel Co. 33
Monarch Mfg. Works, Inc. 45

Neptune Meters Co. 4

Oil Equipment Lab. 45
Olsen Co., C. A. 7

Penn Electric Switch Co. 13
Perfex Corporation 26, 27
Preferred Utilities Mfg. Corp. 49

Sun Oil Co. 47
Sundstrand Machine Tool Co 3

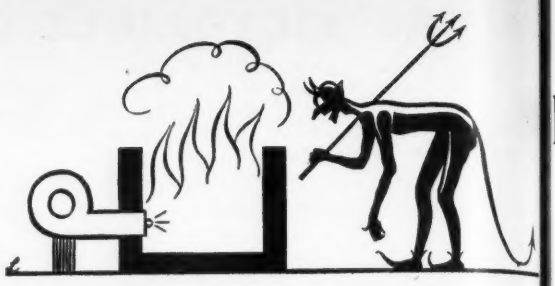
Thrush Co., H. A. 12
Timken Silent Automatic Div. 15
Tuthill Pump Co. 35

U. S. Radiator Corp. ..... Inside Front Cover

Wayne Oil Burner Corp. 44
Webster Electric Co. 8
Williams Oil-O-Matic Htg. Corp. 25

York Oil Burner Corp. 14

CAN YOU HELP US? We need undamaged copies of our January, 1943, Statistical Issue (Yearbook). If you have one to spare, drop us a note or postcard and tell us its condition. If we buy it, we will send you $1 plus postage. Book Department, FUELOIL & OIL HEAT, 232 Madison Ave., New York 16, N. Y.



Fire box

FUELOIL & OIL HEAT CLASSIFIED ADVERTISING

Insertions are payable in advance. The rate is 75 cents per line, with a minimum charge of $4.50 for six lines or less.

Will buy old or used Electric Furnace Man, Motor Stoker or Iron Fireman, any condition. Send description for liberal offer. Box 463, FUELOIL & OIL HEAT, 232 Madison Ave., New York, 16, N. Y.

Robert Barclay INC. OIL BURNER SUPPLIES 1941

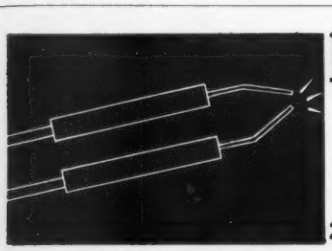
No priorities needed for Barclay's Saran plastic tubing and fittings—replaces copper and steel. Save fuel and money with Barclay's draft regulators and insulating material. Write for our catalog of all installation accessories and replacement parts for oil burners, stokers and automatic heating. Robert Barclay, Inc., 130 N. Peoria St., Chicago, Illinois.

FIRE PROTECTION ENGINEER and Inspector. Permanent position open in East, South, or Middle West, with large industrial fire insurance organization. Previous knowledge in this work not necessary. Applicant must be a technical graduate with manufacturing or engineering experience, and possess a good personality. Send photo with letter. Men subject to draft for military service cannot be considered. Box 464, FUELOIL & OIL HEAT, 232 Madison Ave., New York 16, N. Y.

ONLY 500 LEFT. We have available 500—275 gallon basement fuel oil tanks, 12 gauge. C. HOFFBERGER COMPANY, Monument & Forrest Streets, Baltimore 2, Maryland.

AVAILABLE NOW FOR 1943–1944 SEASON

Folders for protecting and recording customers fueloil coupon ration sheets. May be filed alphabetically, by street, town or degree day next delivery in regular letter size file cabinets. Adequate space provided for all data necessary to complete your records and comply with O.P.A. regulations. OVER 500,000 used last year by fuel oil dealers. Nominal price $3 per 100 folders. Can be used with or without degree day system. ORDER NOW. DEGREE DAY SYSTEMS, 5104 39th Ave., Woodside, N. Y.



PERFORMANCE-PROVED

Oil Burner Ignition Electrodes, Insulators, Cables, Bus Bars, Assemblies

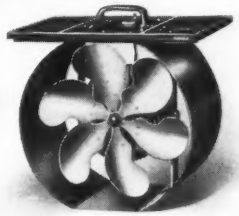
More than a million in use today!

DIELECTRIC PRODUCTS CO.

245 CUSTER AVENUE • JERSEY CITY, NEW JERSEY

This *Emerson-Electric* Device Pioneered the Use of *Motors* on Home Heating Equipment!

Illustrations from Emerson-Electric Advertising of 1908



CLOSE UP OF BLOWER
(Blade Side)

This fan-type blower was a logical adaptation of the then time-tested Emerson-Electric fan. Installed in return air duct of the furnace, it supplemented the inefficient gravity method of distributing warm air to all parts of the home.

Store Solid Fuel Now!

Since 1908—when this furnace blower was introduced—a vast new industry has contributed to the raising of American living standards.

Thanks to the ingenuity and progressiveness of heating equipment manufacturers, the people of America will be warmer and healthier next winter than any nation on earth—despite the necessity for fuel conservation.

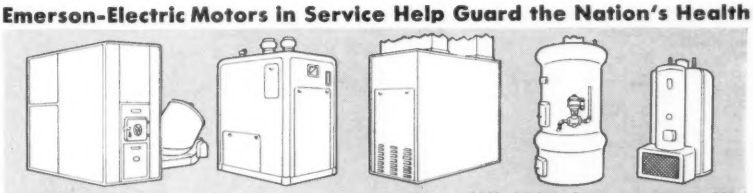
Since this pioneering idea of a furnace blower was introduced, 35 years ago, the industry has advanced by tremendous strides, using electric motors for many purposes.

All through the years, Emerson-Electric has kept pace, designing and producing precision-built motors for numerous types of mechanical-firing and air-moving heating units. Other new and startling developments are in waiting for the home of the future.

"After Victory", manufacturers of heating equipment will again confidently power their units with Emerson-Electric motors, based on the latest conceptions of design, construction and efficiency.

THE EMERSON ELECTRIC MANUFACTURING COMPANY
SAINT LOUIS
Branches: New York • Detroit
Chicago • Los Angeles • Davenport

Emerson-Electric Motors in Service Help Guard the Nation's Health



Motor-driven Oil Burners and Stokers for Boilers and Winter Air Conditioning Units.
Motor-driven Blowers for Coal, Gas and Oil-fired Winter Air Conditioning Units.
Motor-driven Hot Water Circulators—Motor-driven Oil Burner Water Heaters.

331

EMERSON ELECTRIC

MOTORS • FANS • APPLIANCES • A. C. ARC WELDERS

"All we did was install M-H Temperature Control"

MAYBE our artist overdid things a trifle when we asked him to depict the interest caused by installing M-H Individual Apartment Control. The awful truth is that he's an apartment dweller himself and knows first-hand just how uncomfortable an apartment can be without adequate temperature control. So probably the idea just went to his head. In any event, there's no denying that M-H Individual Apartment Control not only satisfies tenants by keeping them healthy and comfortable, but, by eliminating costly overheating, saves money as well. Often the fuel saved can pay the cost of the control system in a single heating season. Minneapolis-Honeywell Regulator Company, 2920 Fourth Ave. So., Minneapolis, Minnesota.

Watch for announcement of our $10,000 competition for Architects and Heating Engineers next month

MINNEAPOLIS-HONEYWELL

CONTROL *Systems*